



SEQUENCE LISTING

<110> Leite, Mario
Spytek, Kimberly A
Guo, Xiaojia (Sasha)
Fernandes, Elma
Li, Li
Kekuda, Ramesh
Liu, Xiahong
Casman, Stacie
Boldog, Ferenc
Patturajan, Meera
Blalock, Angela
Ballinger, Robert
Vernet, Corine
Tchernev, Velizar T
Malyankar, Uriel M
Gusev, Vladimir
Rastelli, Luca
Mezes, Peter S
Ellerman, Karen
Heyes, Melvin P
Herrman, John
Pena, Carol E A
Shimkets, Richard A
Taupier Jr, Raymond J
Moore, Noelle
Shenoy, Suresh
Edinger, Shlomit
Gunther, Erik
Stone, Dave
Millet, Isabelle
Peyman, John
Smithson, Glenda

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 Gly Lys Asp Phe Ser Thr Thr Thr Lys Leu Asn Arg His Lys Lys Ile
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Lys Pro Phe Lys Cys Asp Glu Cys Gly Lys Ala Phe Ser Gln Ser Thr
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 Gln Ala Ile Val Asp Thr Gly Thr Ser Leu Leu Thr Gly Pro Thr Ser
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Gly Asp Met Val Val Ser Cys Ser Ala Ile Ser Ser Leu Pro Asp Ile		
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Ile Leu Gln Ser Glu Gly Ser Cys Ile Ser Gly Phe Gln Gly Met Asn		
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Leu Pro Thr Glu Ser Gly Glu Leu Trp Ile Leu Gly Asp Val Phe Ile		

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Gly Ile Gly Thr Pro Ala Gln Asp Phe Thr Val Val Phe Asp Thr Gly
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Ser Ser Asn Leu Trp Val Pro Ser Val Tyr Cys Ser Ser Leu Ala Cys
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Leu Asn Trp Val Pro Val Thr Val Glu Gly Tyr Trp Gln Ile Thr Val
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Asp Ser Ile Thr Met Asn Gly Glu Thr Ile Ala Cys Ala Glu Gly Cys
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Gln Ala Ile Val Asp Thr Gly Thr Ser Leu Leu Thr Gly Pro Thr Ser
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Pro Ile Ala Asn Ile Gln Ser Asp Ile Gly Ala Ser Glu Asn Ser Asp
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Gly Asp Met Val Val Ser Cys Ser Ala Ile Ser Ser Leu Pro Asp Ile
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Val Phe Thr Ile Asn Gly Val Gln Tyr Pro Val Pro Pro Ser Ala Tyr
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Ile Leu Gln Ser Glu Gly Ser Cys Ile Ser Gly Phe Gln Gly Met Asn
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Val Pro Thr Glu Ser Gly Glu Leu Trp Ile Leu Gly Asp Val Phe Ile
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<210> 12
 <211> 374

<212> PRT

<213> Homo sapiens

<400> 12

Met Tyr Lys Val Pro Leu Ile Arg Lys Lys Ser Leu Arg Arg Thr Leu
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Ser Glu Arg Gly Leu Leu Lys Asp Phe Leu Lys Lys His Asn Leu Asn
20 25 30
Pro Ala Arg Lys Tyr Phe Pro Gln Trp Glu Ala Pro Thr Leu Val Asp
35 40 45
Glu Gln Pro Leu Glu Asn Tyr Leu Asp Met Glu Tyr Phe Gly Thr Ile
50 55 60
Gly Ile Gly Thr Pro Ala Gln Asp Phe Thr Val Val Phe Asp Thr Gly
65 70 75 80
Ser Ser Asn Leu Trp Val Pro Ser Val Tyr Cys Ser Ser Leu Ala Cys
85 90 95
Thr Asn His Asn Arg Phe Asn Pro Glu Asp Ser Ser Thr Tyr Gln Ser
100 105 110
Thr Ser Glu Thr Val Ser Ile Thr Tyr Gly Thr Gly Ser Met Thr Gly
115 120 125
Ile Leu Gly Tyr Asp Thr Val Gln Val Gly Gly Ile Ser Asp Thr Asn
130 135 140
Gln Ile Phe Gly Leu Ser Glu Thr Glu Pro Gly Ser Phe Leu Tyr Tyr
145 150 155 160
Ala Pro Phe Asp Asp Ile Leu Gly Leu Ala Tyr Pro Ser Ile Ser Ser
165 170 175
Ser Gly Ala Thr Pro Val Phe Asp Asn Ile Trp Asn Gln Gly Leu Val
180 185 190
Ser Gln Asp Leu Phe Ser Val Tyr Leu Ser Ala Asp Asp Gln Ser Gly
195 200 205
Ser Val Val Ile Phe Gly Gly Ile Asp Ser Ser Tyr Tyr Thr Gly Ser
210 215 220
Leu Asn Trp Val Pro Val Thr Val Glu Gly Tyr Trp Gln Ile Thr Val
225 230 235 240

<213> Homo sapiens

<400> 14

Met Ala Met Val Ile Ile Phe Leu Val Leu Leu Phe Trp Glu Asn Glu
1 5 10 15

Val Asn Asp Glu Ala Val Met Ser Thr Leu Glu His Leu His Val Asp
20 25 30

Tyr Pro Gln Asn Asp Val Pro Val Pro Ala Arg Tyr Cys Asn His Met
35 40 45

Ile Ile Gln Arg Val Ile Arg Glu Pro Asp His Thr Cys Lys Lys Glu
50 55 60

His Val Phe Ile His Glu Arg Pro Arg Lys Ile Asn Gly Ile Cys Ile
65 70 75 80

Ser Pro Lys Lys Val Ala Cys Gln Asn Leu Ser Ala Ile Phe Cys Phe
85 90 95

Gln Ser Glu Thr Lys Phe Lys Met Thr Val Cys Gln Leu Ile Glu Gly
100 105 110

Thr Arg Tyr Pro Ala Cys Arg Tyr His Tyr Ser Pro Thr Glu Gly Phe
115 120 125

Val Leu Val Thr Cys Asp Asp Leu Arg Pro Asp Ser Phe
130 135 140

<210> 15

<211> 1037

<212> DNA

<213> Homo sapiens

<400> 15

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```

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caggggtgtg gcaccagtg ggagcacact ttcgcctctg actgtgtccg ccacagcctg 960
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acttagtcat ctgccaa 1037

```

<210> 16

<211> 326

<212> PRT

<213> Homo sapiens

<400> 16

```

Met Glu Lys Tyr Glu Arg Ile Arg Val Val Gly Arg Gly Ala Phe Gly
  1                      5                      10                      15

```

```

Ile Val His Leu Cys Leu Arg Lys Ala Asp Gln Lys Leu Val Ile Ile
      20                      25                      30

```

```

Lys Gln Ile Pro Val Glu Gln Met Thr Lys Glu Glu Arg Gln Ala Ala
      35                      40                      45

```

```

Gln Asn Glu Cys Gln Val Leu Lys Leu Leu Asn His Pro Asn Val Ile
      50                      55                      60

```

```

Glu Tyr Tyr Glu Asn Phe Leu Glu Asp Lys Ala Leu Met Thr Ala Met
      65                      70                      75                      80

```

```

Glu Tyr Ala Pro Gly Gly Thr Leu Ala Glu Phe Ile Gln Lys Arg Cys
      85                      90                      95

```

```

Asn Ser Leu Leu Glu Glu Glu Thr Ile Leu His Phe Phe Val Gln Ile
      100                      105                      110

```

```

Leu Leu Ala Leu His His Val His Thr His Leu Ile Leu His Arg Asp
      115                      120                      125

```

```

Leu Lys Thr Gln Asn Ile Leu Leu Asp Lys His Arg Met Val Val Lys
      130                      135                      140

```

```

Ile Gly Asp Phe Gly Ile Ser Lys Ile Leu Ser Ser Lys Ser Lys Ala
      145                      150                      155                      160

```

```

Tyr Thr Val Val Gly Thr Pro Cys Tyr Ile Ser Pro Glu Leu Cys Glu
      165                      170                      175

```

Gly Lys Pro Tyr Asn Gln Lys Ser Asp Ile Trp Ala Leu Gly Cys Val
180 185 190

Leu Tyr Glu Leu Ala Ser Leu Lys Arg Ala Phe Glu Ala Ala Asn Leu
195 200 205

Pro Ala Leu Val Leu Lys Ile Met Ser Gly Thr Phe Ala Pro Ile Ser
210 215 220

Asp Arg Tyr Ser Pro Glu Leu Arg Gln Leu Val Leu Ser Leu Leu Ser
225 230 235 240

Leu Glu Pro Ala Gln Arg Pro Pro Leu Ser His Ile Met Ala Gln Pro
245 250 255

Leu Cys Ile Arg Ala Leu Leu Asn Leu His Thr Asp Val Gly Ser Val
260 265 270

Arg Met Arg Arg Pro Val Gln Gly Gln Arg Ala Val Leu Gly Gly Arg
275 280 285

Val Trp Ala Pro Ser Gly Ser Thr Leu Ser Pro Leu Thr Val Ser Ala
290 295 300

Thr Ala Cys Thr Tyr Thr Leu Ser Ser Phe Thr Ile Asp Thr Leu His
305 310 315 320

His Asp Leu Lys Thr Gln
325

<210> 17

<211> 1591

<212> DNA

<213> Homo sapiens

<400> 17

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gcgcacctcg cctgcgcgcc gcccgctgct ggccagcccc gggcccgga ctcgggcgat 180
gtccgctcgc agccgcgcc cctgtttcag tggagcaagt ggaagaagag gatgggctcg 240
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atcgagcgcg acgagggtcc gaatgtcttc cgggagctgg agatcctgca ggagatcgag 480
catgtcttcc tggagaacct ctggtattca ttccaagatg aggaggacat gttcatggtg 540
gtagacctgc ttctgggtgg agacctacgt taccacctgc agcagaacgt gcagttctcc 600
gaggacacag tgaggctgta catctgcgag atggcactgg ctctggacta cctgcgcggc 660

```

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1591

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<210> 18

<211> 488

<212> PRT

<213> Homo sapiens

<400> 18

```

Met Arg Ser Gly Ala Glu Arg Arg Gly Ser Ser Ala Ala Ala Ser Pro
  1             5             10             15

```

```

Gly Ser Pro Pro Pro Gly Arg Ala Arg Pro Ala Gly Ser Asp Ala Pro
          20             25             30

```

```

Ser Ala Leu Pro Pro Pro Ala Ala Gly Gln Pro Arg Ala Arg Asp Ser
          35             40             45

```

```

Gly Asp Val Arg Ser Gln Pro Arg Pro Leu Phe Gln Trp Ser Lys Trp
          50             55             60

```

```

Lys Lys Arg Met Gly Ser Ser Met Ser Ala Ala Thr Ala Arg Arg Pro
          65             70             75             80

```

```

Val Phe Asp Asp Lys Glu Asp Val Asn Phe Asp His Phe Gln Ile Leu
          85             90             95

```

```

Arg Ala Ile Gly Lys Gly Ser Phe Gly Lys Val Val Cys Ile Val Gln
          100            105            110

```

```

Lys Arg Asp Thr Glu Lys Met Tyr Ala Met Lys Tyr Met Asn Lys Gln
          115            120            125

```


Gln Cys Ile Glu Arg Asp Glu Val Arg Asn Val Phe Arg Glu Leu Glu
 130 135 140

Ile Leu Gln Glu Ile Glu His Val Phe Leu Val Asn Leu Trp Tyr Ser
 145 150 155 160

Phe Gln Asp Glu Glu Asp Met Phe Met Val Val Asp Leu Leu Leu Gly
 165 170 175

Gly Asp Leu Arg Tyr His Leu Gln Gln Asn Val Gln Phe Ser Glu Asp
 180 185 190

Thr Val Arg Leu Tyr Ile Cys Glu Met Ala Leu Ala Leu Asp Tyr Leu
 195 200 205

Arg Gly Gln His Ile Ile His Arg Asp Val Lys Pro Asp Asn Ile Leu
 210 215 220

Leu Asp Glu Arg Gly His Ala His Leu Thr Asp Phe Asn Ile Ala Thr
 225 230 235 240

Ile Ile Lys Asp Gly Glu Arg Ala Thr Ala Leu Ala Gly Thr Lys Pro
 245 250 255

Tyr Met Ala Pro Glu Ile Phe His Ser Phe Val Asn Gly Gly Thr Gly
 260 265 270

Tyr Ser Phe Glu Val Asp Trp Trp Ser Val Gly Val Met Ala Tyr Glu
 275 280 285

Leu Leu Arg Gly Trp Arg Pro Tyr Asp Ile His Ser Ser Asn Ala Val
 290 295 300

Glu Ser Leu Val Gln Leu Phe Ser Thr Val Ser Val Gln Tyr Val Pro
 305 310 315 320

Thr Trp Ser Lys Glu Met Val Gly Leu Leu Arg Lys Val Leu Leu Thr
 325 330 335

Val Asn Pro Glu His Arg Leu Ser Ser Leu Gln Asp Val Gln Ala Ala
 340 345 350

Pro Ala Leu Ala Gly Val Leu Trp Asp His Leu Ser Glu Lys Arg Val
 355 360 365

Glu Pro Gly Phe Val Pro Asn Lys Gly Arg Leu His Cys Asp Pro Thr
 370 375 380

Phe Glu Leu Glu Glu Met Ile Leu Glu Ser Arg Pro Leu His Lys Lys
 385 390 395 400

Lys Lys Arg Leu Ala Lys Asn Lys Ser Arg Asp Asn Ser Arg Asp Ser
 405 410 415

Ser Gln Ser Glu Asn Asp Tyr Leu Gln Asp Cys Leu Asp Ala Ile Gln
 420 425 430

Gln Asp Phe Val Ile Phe Asn Arg Glu Lys Leu Lys Arg Ser Gln Asp
 435 440 445

Leu Pro Arg Glu Pro Leu Pro Ala Pro Glu Ser Arg Asp Ala Ala Glu
 450 455 460

Pro Val Glu Asp Glu Ala Glu Arg Ser Ala Leu Pro Met Cys Gly Pro
 465 470 475 480

Ile Cys Pro Ser Ala Gly Ser Gly
 485

<210> 19

<211> 581

<212> DNA

<213> Homo sapiens

<400> 19

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 agctcccaaa gttggcaggg acctgtact ccatggccat ggtggccagt gacttctccc 180
 tcctggagac cgtggaggcc cctctgaggg tcaacatcac ctcgctgtgg cccacccccg 240
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 tcctcgccca gaagactgag gacccggtg tgttcatggt cgaccgtagc aggagctacg 360
 tgttcttctg catggggacc accacaccca gtgtgacca ccacacgatg tgccagtacc 420
 tggggatgac agccaggacc ctagaggcag acgacaaggt catggaggaa ttcacagct 480
 ttctcaggac cctgcccgtg cacatgtgga tcttcttgga cgttaccag gcggaacagt 540
 gccgcgtcta gatgagctcc tgctcagtcc tgccctctgg g 581

<210> 20

<211> 171

<212> PRT

<213> Homo sapiens

<400> 20

Met Gln Cys Leu Leu Leu Thr Leu Ser Met Ala Leu Val Cys Ala Ile
 1 5 10 15

Gln Ala Arg Asp Ile Pro Gln Thr Lys Gln Asp Val Glu Leu Pro Lys
 20 25 30

Leu Ala Gly Thr Trp Tyr Ser Met Ala Met Val Ala Ser Asp Phe Ser
 35 40 45

Leu Leu Glu Thr Val Glu Ala Pro Leu Arg Val Asn Ile Thr Ser Leu
 50 55 60

Trp Pro Thr Pro Glu Gly Asn Leu Glu Ile Ile Leu His Arg Trp Glu
 65 70 75 80

His His Arg Cys Val Glu Arg Thr Val Leu Ala Gln Lys Thr Glu Asp
 85 90 95

Pro Ala Val Phe Met Val Asp Arg Ser Arg Ser Tyr Val Phe Phe Cys
 100 105 110

Met Gly Thr Thr Thr Pro Ser Ala Asp His His Thr Met Cys Gln Tyr
 115 120 125

Leu Gly Met Thr Ala Arg Thr Leu Glu Ala Asp Asp Lys Val Met Glu
 130 135 140

Glu Phe Ile Ser Phe Leu Arg Thr Leu Pro Val His Met Trp Ile Phe
 145 150 155 160

Leu Asp Val Thr Gln Ala Glu Gln Cys Arg Val
 165 170

<210> 21

<211> 4718

<212> DNA

<213> Homo sapiens

<400> 21

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 caagcacagc ccactcctca gtaccggttc cggaagagag acaaagtgat gttttacggc 180
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 aaaaacgttc gggctcctggg ccactttgag aagccgctgt tcctggagct ttgcaaacac 480
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```

<210> 22

<211> 1419

<212> PRT

<213> Homo sapiens

<400> 22

```

Met Glu Glu Glu Lys Asp Asp Ser Pro Gln Leu Thr Gly Ile Ala Val
  1                      5                      10                     15

```

```

Gly Ala Leu Leu Ala Leu Ala Leu Val Gly Val Leu Ile Leu Phe Met
          20                      25                     30

```

```

Phe Arg Arg Leu Arg Gln Phe Arg Gln Ala Gln Pro Thr Pro Gln Tyr
          35                      40                     45

```

```

Arg Phe Arg Lys Arg Asp Lys Val Met Phe Tyr Gly Arg Lys Ile Met
          50                      55                     60

```

```

Arg Lys Val Thr Thr Leu Pro Asn Thr Leu Val Glu Asn Thr Ala Leu
          65                      70                     75                     80

```

```

Pro Arg Gln Arg Ala Arg Lys Arg Thr Lys Val Leu Ser Leu Ala Lys
          85                      90                     95

```

```

Arg Ile Leu Arg Phe Lys Lys Glu Tyr Pro Ala Leu Gln Pro Lys Glu

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100	105	110
Pro Pro Pro Ser Leu Leu Glu Ala Asp Leu Thr Glu Phe Asp Val Lys		
115	120	125
Asn Ser His Leu Pro Ser Glu Val Leu Tyr Met Leu Lys Asn Val Arg		
130	135	140
Val Leu Gly His Phe Glu Lys Pro Leu Phe Leu Glu Leu Cys Lys His		
145	150	155
Ile Val Phe Val Gln Leu Gln Glu Gly Glu His Val Phe Gln Pro Arg		
165	170	175
Glu Pro Asp Pro Ser Ile Cys Val Val Gln Asp Gly Arg Leu Glu Val		
180	185	190
Cys Ile Gln Asp Thr Asp Gly Thr Glu Val Val Val Lys Glu Val Leu		
195	200	205
Ala Gly Asp Ser Val His Ser Leu Leu Ser Ile Leu Asp Ile Ile Thr		
210	215	220
Gly His Ala Ala Pro Tyr Lys Thr Val Ser Val Arg Ala Ala Ile Pro		
225	230	235
Ser Thr Ile Leu Arg Leu Pro Ala Ala Ala Phe His Gly Val Phe Glu		
245	250	255
Lys Tyr Pro Glu Thr Leu Val Arg Val Val Gln Leu Gln Ile Ile Met		
260	265	270
Val Arg Leu Gln Arg Val Thr Phe Leu Ala Leu His Asn Tyr Leu Gly		
275	280	285
Leu Thr Thr Glu Leu Phe Asn Ala Glu Ser Gln Ala Ile Pro Leu Val		
290	295	300
Ser Val Ala Ser Val Ala Ala Gly Lys Ala Lys Lys Gln Val Phe Tyr		
305	310	315
Gly Glu Glu Glu Arg Leu Lys Lys Pro Pro Arg Leu His Glu Ser Cys		
325	330	335
Asp Ser Ala Asp His Gly Gly Gly Arg Pro Ala Ala Ala Gly Pro Leu		
340	345	350
Leu Lys Arg Ser His Ser Val Pro Ala Pro Ser Ile Arg Lys Gln Ile		

355	360	365
Leu Glu Glu Leu Glu Lys Pro Gly Ala Gly Asp Pro Asp Pro Ser Ala		
370	375	380
Pro Gln Gly Gly Pro Gly Ser Ala Thr Ser Asp Leu Gly Met Ala Cys		
385	390	395 400
Asp Arg Ala Arg Val Phe Leu His Ser Asp Glu His Pro Gly Ser Ser		
405	410	415
Val Ala Ser Lys Ser Arg Lys Ser Val Met Val Ala Glu Ile Pro Ser		
420	425	430
Thr Val Ser Gln His Ser Glu Ser His Thr Asp Glu Thr Leu Ala Ser		
435	440	445
Arg Lys Ser Asp Ala Ile Phe Arg Ala Ala Lys Lys Asp Leu Leu Thr		
450	455	460
Leu Met Lys Leu Glu Asp Ser Ser Leu Leu Asp Gly Arg Val Ala Leu		
465	470	475 480
Leu His Val Pro Ala Cys Thr Val Val Ser Met Gln Gly Asp Gln Asp		
485	490	495
Ala Ser Ile Leu Phe Val Val Leu Gly Leu Leu His Val Tyr Gln Arg		
500	505	510
Lys Ile Cys Ser Gln Glu Asp Thr Cys Leu Phe Ser Arg Ala Pro Gly		
515	520	525
Asp Ser Ser Leu Leu Asp Gly Arg Val Ala Leu Leu His Val Pro Ala		
530	535	540
Gly Thr Val Val Ser Arg Gln Gly Asp Gln Asp Ala Ser Ile Leu Phe		
545	550	555 560
Val Val Ser Gly Leu Leu His Val Tyr Gln Arg Lys Ile Gly Ser Gln		
565	570	575
Glu Asp Thr Cys Leu Phe Leu Thr Arg Pro Gly Glu Met Val Gly Gln		
580	585	590
Leu Ala Val Leu Thr Gly Glu Pro Leu Ile Phe Thr Val Lys Ala Asn		
595	600	605
Arg Asp Cys Ser Phe Leu Ser Ile Ser Lys Ala His Phe Tyr Glu Ile		

610	615	620
Met Arg Lys Gln Pro Thr Val Val Leu Gly Val Ala His Thr Val Val		
625	630	635 640
Lys Arg Met Ser Ser Phe Val Arg Gln Ile Asp Phe Ala Leu Asp Trp		
	645	650 655
Val Glu Val Glu Ala Gly Arg Ala Ile Tyr Arg Gln Gly Asp Lys Ser		
	660	665 670
Asp Cys Thr Tyr Ile Met Leu Ser Gly Arg Leu Arg Ser Val Ile Arg		
	675	680 685
Lys Asp Asp Gly Lys Lys Arg Leu Ala Gly Glu Tyr Gly Arg Gly Asp		
	690	695 700
Leu Val Gly Val Val Glu Thr Leu Thr His Gln Ala Arg Ala Thr Thr		
	705	710 715 720
Val His Ala Val Arg Asp Ser Glu Leu Ala Lys Leu Pro Ala Gly Ala		
	725	730 735
Leu Thr Cys Ile Lys Arg Arg Tyr Pro Gln Val Val Thr Arg Leu Ile		
	740	745 750
His Leu Leu Gly Glu Lys Ile Leu Gly Ser Leu Gln Gln Gly Pro Val		
	755	760 765
Thr Gly His Gln Leu Gly Leu Pro Thr Glu Gly Ser Lys Trp Asp Leu		
	770	775 780
Gly Asn Pro Ala Val Asn Leu Ser Thr Val Ala Val Met Pro Val Ser		
	785	790 795 800
Glu Glu Val Pro Leu Thr Ala Phe Ala Leu Glu Leu Glu His Ala Leu		
	805	810 815
Ser Ala Ile Gly Pro Pro Leu Leu Leu Thr Ser Asp Asn Ile Lys Arg		
	820	825 830
Arg Leu Gly Ser Ala Ala Leu Asp Ser Val His Glu Tyr Arg Leu Ser		
	835	840 845
Ser Trp Leu Gly Gln Gln Glu Asp Thr His Arg Ile Val Leu Tyr Gln		
	850	855 860
Val Asp Gly Thr Leu Thr Pro Trp Thr Gln Arg Cys Val Arg Gln Ala		

865		870		875		880
Asp Cys Ile Leu Ile Val Gly Leu Gly Asp Gln Glu Pro Thr Val Gly						
	885		890		895	
Glu Leu Glu Arg Met Leu Glu Ser Thr Ala Val Arg Ala Gln Lys Gln						
	900		905		910	
Leu Ile Leu Leu His Arg Glu Glu Gly Pro Ala Pro Ala Arg Thr Val						
	915		920		925	
Glu Trp Leu Asn Met Arg Ser Trp Cys Ser Gly His Leu His Leu Cys						
	930		935		940	
Cys Pro Arg Arg Val Phe Ser Arg Arg Ser Leu Pro Lys Leu Val Glu						
	945		950		955	960
Met Tyr Lys His Val Phe Gln Arg Pro Pro Asp Arg His Ser Asp Phe						
		965		970		975
Ser Arg Leu Ala Arg Val Leu Thr Gly Asn Ala Ile Ala Leu Val Leu						
	980		985		990	
Gly Gly Gly Gly Ala Ser Met Thr Ser Leu Met Lys Ala Ala Leu Asp						
	995		1000		1005	
Leu Thr Tyr Pro Ile Thr Ser Met Phe Ser Gly Ala Gly Phe Asn Ser						
	1010		1015		1020	
Ser Ile Phe Ser Val Phe Lys Asp Gln Gln Ile Glu Asp Leu Trp Ile						
	1025		1030		1035	1040
Pro Tyr Phe Ala Ile Thr Thr Asp Ile Thr Ala Ser Ala Met Arg Val						
		1045		1050		1055
His Thr Asp Gly Ser Leu Trp Trp Tyr Val Arg Ala Ser Met Ser Leu						
	1060		1065		1070	
Ser Gly Tyr Met Pro Pro Leu Cys Asp Pro Lys Asp Gly His Leu Leu						
	1075		1080		1085	
Met Asp Gly Gly Tyr Ile Asn Asn Leu Pro Ala Ala Ser Ala Pro Arg						
	1090		1095		1100	
Ser Leu Gly Trp Asn Thr Phe Ser Leu Glu Tyr Ala Lys Gly Lys Cys						
	1105		1110		1115	1120
Gln Ala Gly Ile Arg Ala Pro Arg Thr Cys Thr Arg Val Tyr Met His						

1125	1130	1135
Thr Gln Ala Pro Ala Ala Cys Ala Pro Ala Tyr Gly Pro Val Cys Gln		
1140	1145	1150
Leu Ser Ser Met Gln Asn Lys Gly Gln Val Glu Glu Leu Gly Ala Ile		
1155	1160	1165
Lys Pro His Leu Cys Pro Gln Ser Glu Thr Asn Ser Leu Gln Gly Val		
1170	1175	1180
Thr Arg Ala Gly Phe Ser Leu Ala Asp Val Ala Arg Ser Met Gly Ala		
1185	1190	1195
Lys Val Val Ile Ala Ile Asp Val Gly Ser Arg Asp Glu Thr Asp Leu		
1205	1210	1215
Thr Asn Tyr Gly Asp Ala Leu Ser Gly Trp Trp Leu Leu Trp Lys Arg		
1220	1225	1230
Trp Asn Pro Leu Ala Thr Lys Val Lys Val Leu Asn Met Ala Glu Ile		
1235	1240	1245
Gln Thr Arg Leu Ala Tyr Val Cys Cys Val Arg Gln Leu Glu Val Val		
1250	1255	1260
Lys Ser Ser Asp Tyr Cys Glu Tyr Leu Arg Pro Pro Ile Asp Ser Tyr		
1265	1270	1275
Ser Thr Leu Asp Phe Gly Lys Phe Asn Glu Ile Cys Glu Val Gly Tyr		
1285	1290	1295
Gln His Gly Arg Thr Val Phe Asp Ile Trp Gly Arg Ser Gly Val Leu		
1300	1305	1310
Glu Lys Met Leu Arg Asp Gln Gln Gly Pro Ser Lys Lys Pro Ala Ser		
1315	1320	1325
Ala Val Leu Thr Cys Pro Asn Ala Ser Phe Thr Asp Leu Ala Glu Ile		
1330	1335	1340
Val Ser Arg Ile Glu Pro Ala Lys Pro Ala Met Val Asp Asp Glu Ser		
1345	1350	1355
Asp Tyr Gln Thr Glu Tyr Glu Glu Glu Leu Leu Asp Val Pro Arg Asp		
1365	1370	1375
Ala Tyr Ala Asp Phe Gln Ser Thr Ser Ala Gln Gln Gly Ser Asp Leu		

1380 1385 1390
 Glu Asp Glu Ser Ser Leu Arg His Arg His Pro Ser Leu Ala Phe Pro
 1395 1400 1405

 Lys Leu Ser Glu Gly Ser Ser Asp Gln Asp Gly
 1410 1415

<210> 23
 <211> 815
 <212> DNA
 <213> Homo sapiens

<400> 23
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 gctgggccag aagcggggcg ctctccggag gaagttcggc ttctcggccg aggactaccg 120
 cgagctggag cgcctggcgc tccaggctga gccccaccgc gccggccgcc agtggaagtt 180
 ccccggtccc ttctacttcg ccatcaccgt catcactacc atcgagtacg gccacgccgc 240
 gccgggtacg gactccggca aggtcttctg catgttctac gcgctcctgg gcatcccgc 300
 gacgtgggtc actttccaga gcctgggcga acggtgaac gcggtgggtg ggcgcctcct 360
 gttggcggcc aagtgtgcc tgggcctgcg gtggacgtgc gtgtccacgg agaacctggt 420
 ggtggccggg ctgctggcgt gtgccgccac cctggccctc ggggccgtcg ctttctcgca 480
 cttcgagggc tggaccttct tccacgccta ctactactgc ttcacacccc tcaccacat 540
 cggcttcggc gacaacctgg gcttttcgcc cccctcgagc ccgggggtcg tgcgtggcgg 600
 gcaggtcccc aggcttgggg cccggtggaa gtccatctga caacccccacc caggccaggg 660
 tcgaatctgg aatgggaggg tctggcttca gctatcaggg caccctcccc agggattgga 720
 aacggatgac gggcctctag gcggtcttct gccacgagca gtttctcatt actgtctgtg 780
 gctaagtccc ctccctcctt tcaaaaata tatta 815

<210> 24
 <211> 212
 <212> PRT
 <213> Homo sapiens

<400> 24
 Val Gly Ala Ala Val Phe Asp Ala Leu Glu Ser Glu Ala Glu Ser Gly
 1 5 10 15

 Arg Gln Arg Leu Leu Val Gln Lys Arg Gly Ala Leu Arg Arg Lys Phe
 20 25 30

 Gly Phe Ser Ala Glu Asp Tyr Arg Glu Leu Glu Arg Leu Ala Leu Gln
 35 40 45

 Ala Glu Pro His Arg Ala Gly Arg Gln Trp Lys Phe Pro Gly Ser Phe
 50 55 60

Tyr Phe Ala Ile Thr Val Ile Thr Thr Ile Glu Tyr Gly His Ala Ala
65 70 75 80

Pro Gly Thr Asp Ser Gly Lys Val Phe Cys Met Phe Tyr Ala Leu Leu
85 90 95

Gly Ile Pro Leu Thr Leu Val Thr Phe Gln Ser Leu Gly Glu Arg Leu
100 105 110

Asn Ala Val Val Arg Arg Leu Leu Leu Ala Ala Lys Cys Cys Leu Gly
115 120 125

Leu Arg Trp Thr Cys Val Ser Thr Glu Asn Leu Val Val Ala Gly Leu
130 135 140

Leu Ala Cys Ala Ala Thr Leu Ala Leu Gly Ala Val Ala Phe Ser His
145 150 155 160

Phe Glu Gly Trp Thr Phe Phe His Ala Tyr Tyr Tyr Cys Phe Ile Thr
165 170 175

Leu Thr Thr Ile Gly Phe Gly Asp Asn Leu Gly Phe Ser Pro Pro Ser
180 185 190

Ser Pro Gly Val Val Arg Gly Gly Gln Ala Pro Arg Leu Gly Ala Arg
195 200 205

Trp Lys Ser Ile
210

<210> 25

<211> 711

<212> DNA

<213> Homo sapiens

<400> 25

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tggacagagg aagggcgccg ggtctgtgtt ccgcgcgcac gtgaagcacc gtaaaggcgc 120
tgcgcgcctg cgcgcgctgg atttcgctga gcggcacggc tacatcaagg gcatcgtcaa 180
ggcccagctc aacattggca atgtgctccc tgtgggcacc atgcctgagg gtacaatcgt 240
gtgctgctg gaggagaagc ctggagaccg tggcaagctg gcccgggcat cagggaacta 300
tgccaccgtt atctcccaca accctgagac caagaagacc cgtgtgaagc tgccctccgg 360
ctccaagaag gttatctcct cagccaacag agctgtgggt ggtgtggtgg ctggagggtg 420
ccgaattgac aaacccatct tgaaggctgg ccgggcgtac cacaatatata aggcaaagag 480
gaactgctgg ccacgagtag ggggtgtggc catgaatcct gtggagcatc cttttggagg 540
tggaaccac cagcacatcg gcaagccctc caccatccgc agagatgccc ctgctggccc 600

caaagtgggt ctcattgctg cccgccggac tggacgtctc cggggaacca agactgtgca 660
 ggagaaagag aactagtgtc gagggcctca ataaagtttg tgtttatgcc a 711

<210> 26
 <211> 210
 <212> PRT
 <213> Homo sapiens

<400> 26
 Met Gly Arg Val Ile Arg Gly Gln Arg Lys Gly Ala Gly Ser Val Phe
 1 5 10 15
 Arg Ala His Val Lys His Arg Lys Gly Ala Ala Arg Leu Arg Ala Val
 20 25 30
 Asp Phe Ala Glu Arg His Gly Tyr Ile Lys Gly Ile Val Lys Ala Gln
 35 40 45
 Leu Asn Ile Gly Asn Val Leu Pro Val Gly Thr Met Pro Glu Gly Thr
 50 55 60
 Ile Val Cys Cys Leu Glu Glu Lys Pro Gly Asp Arg Gly Lys Leu Ala
 65 70 75 80
 Arg Ala Ser Gly Asn Tyr Ala Thr Val Ile Ser His Asn Pro Glu Thr
 85 90 95
 Lys Lys Thr Arg Val Lys Leu Pro Ser Gly Ser Lys Lys Val Ile Ser
 100 105 110
 Ser Ala Asn Arg Ala Val Val Gly Val Val Ala Gly Gly Gly Arg Ile
 115 120 125
 Asp Lys Pro Ile Leu Lys Ala Gly Arg Ala Tyr His Lys Tyr Lys Ala
 130 135 140
 Lys Arg Asn Cys Trp Pro Arg Val Arg Gly Val Ala Met Asn Pro Val
 145 150 155 160
 Glu His Pro Phe Gly Gly Gly Asn His Gln His Ile Gly Lys Pro Ser
 165 170 175
 Thr Ile Arg Arg Asp Ala Pro Ala Gly Arg Lys Val Gly Leu Ile Ala
 180 185 190
 Ala Arg Arg Thr Gly Arg Leu Arg Gly Thr Lys Thr Val Gln Glu Lys
 195 200 205

Glu Asn

210

<210> 27

<211> 1503

<212> DNA

<213> Homo sapiens

<400> 27

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gtgctgcggc atgagtgtct ctgtgctgaa ccccaacaga ctcccagatg gtgtctcagg 60
gctcctccaa ggagcctcac tgctgagcct gcttctgtta ctattgaagg cagcccagcc 120
ctacctgcgg aggagcggc tgctgcggga cctgcgcccc ttcccagcgc cccccacca 180
ctggttcctt gggcacaagc tgatggaaaa atacccatgt gctgttccct tgtggggttg 240
accctttacg atgttcttca gtgtccatga cccagactat gccaagattc tcctgaaaag 300
acaaggtaaa aaccaagagg ggtttctgcc ttttatttct caaggaaaag gactagcggc 360
tctagacgga cccaagtggg tccagcatcg tgcctacta actcctggat tccattttaa 420
catcctgaaa gcatacattg aggtgatggc tcattctgtg aaaatgatgc tgaacaaatg 480
ggaggaacac attgccccaa actcacgtct ggagctcttt caacatgtct ccctgatgac 540
cctggacagc atcatgaagt gtgccttcag ccaccagggc agcatccagt tggacaggtc 600
atcatacctg aaagcagtgt tcaaccttag caaaatctcc aaccagcgca tgaacaattt 660
tctacatcac aacgacctgg ttttcaaatt cagctctcaa ggccaaatct tttctaaatt 720
taaccaagaa cttcatcagc atctagagaa agtaatccag gaccggaagg agtctcttaa 780
ggataagcta aaacaagata ctactcagaa aaggcgctgg gattttctgg acatactttt 840
gagtgccaaa gtagaaaaca ccaaagattt ctctgaagca gatctccagg ctgaagtgaa 900
aacgttcatg tttgcaggac atgacaccac atccagtgc atctcctgga tcctttactg 960
cttggcaaag taccctgagc atcagcagag atgccgagat gaaatcaggg aactcctagg 1020
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ggaatgcctc cgctctacg caccggtagt aaacatatcc cggttactcg acaaaccat 1140
cacctttcca gatggacgct ccttacctgc agggatcacc gtggttctta gtatttgggg 1200
tcttcaccac aacctgctg tctggaaaaa cgtacaggtc ttgaccct tgaggttctc 1260
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gaactgcatt gggcaggagt ttgcatgat tgagttaaag gtaaccattg ccttgattct 1380
gctccacttc agagtgactc cagacccac caggcctctt actttcccca accattttat 1440
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agg 1503
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<210> 28

<211> 494

<212> PRT

<213> Homo sapiens

<400> 28

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Met Ser Val Ser Val Leu Asn Pro Asn Arg Leu Pro Asp Gly Val Ser
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Gly Leu Leu Gln Gly Ala Ser Leu Leu Ser Leu Leu Leu Leu Leu
 20 25 30
 Lys Ala Ala Gln Pro Tyr Leu Arg Arg Gln Arg Leu Leu Arg Asp Leu
 35 40 45
 Arg Pro Phe Pro Ala Pro Pro Thr His Trp Phe Leu Gly His Lys Leu
 50 55 60
 Met Glu Lys Tyr Pro Cys Ala Val Pro Leu Trp Val Gly Pro Phe Thr
 65 70 75 80
 Met Phe Phe Ser Val His Asp Pro Asp Tyr Ala Lys Ile Leu Leu Lys
 85 90 95
 Arg Gln Gly Lys Asn Gln Glu Gly Phe Leu Pro Phe Ile Ser Gln Gly
 100 105 110
 Lys Gly Leu Ala Ala Leu Asp Gly Pro Lys Trp Phe Gln His Arg Arg
 115 120 125
 Leu Leu Thr Pro Gly Phe His Phe Asn Ile Leu Lys Ala Tyr Ile Glu
 130 135 140
 Val Met Ala His Ser Val Lys Met Met Leu Asn Lys Trp Glu Glu His
 145 150 155 160
 Ile Ala Gln Asn Ser Arg Leu Glu Leu Phe Gln His Val Ser Leu Met
 165 170 175
 Thr Leu Asp Ser Ile Met Lys Cys Ala Phe Ser His Gln Gly Ser Ile
 180 185 190
 Gln Leu Asp Arg Ser Ser Tyr Leu Lys Ala Val Phe Asn Leu Ser Lys
 195 200 205
 Ile Ser Asn Gln Arg Met Asn Asn Phe Leu His His Asn Asp Leu Val
 210 215 220
 Phe Lys Phe Ser Ser Gln Gly Gln Ile Phe Ser Lys Phe Asn Gln Glu
 225 230 235 240
 Leu His Gln His Leu Glu Lys Val Ile Gln Asp Arg Lys Glu Ser Leu
 245 250 255
 Lys Asp Lys Leu Lys Gln Asp Thr Thr Gln Lys Arg Arg Trp Asp Phe
 260 265 270

Leu Asp Ile Leu Leu Ser Ala Lys Val Glu Asn Thr Lys Asp Phe Ser
 275 280 285
 Glu Ala Asp Leu Gln Ala Glu Val Lys Thr Phe Met Phe Ala Gly His
 290 295 300
 Asp Thr Thr Ser Ser Ala Ile Ser Trp Ile Leu Tyr Cys Leu Ala Lys
 305 310 315 320
 Tyr Pro Glu His Gln Gln Arg Cys Arg Asp Glu Ile Arg Glu Leu Leu
 325 330 335
 Gly Asp Gly Ser Ser Ile Thr Trp His Leu Ser Gln Met Pro Tyr Thr
 340 345 350
 Thr Met Cys Ile Lys Glu Cys Leu Arg Leu Tyr Ala Pro Val Val Asn
 355 360 365
 Ile Ser Arg Leu Leu Asp Lys Pro Ile Thr Phe Pro Asp Gly Arg Ser
 370 375 380
 Leu Pro Ala Gly Ile Thr Val Val Leu Ser Ile Trp Gly Leu His His
 385 390 395 400
 Asn Pro Ala Val Trp Lys Asn Val Gln Val Phe Asp Pro Leu Arg Phe
 405 410 415
 Ser Gln Glu Asn Ser Asp Gln Arg His Pro Tyr Ala Tyr Leu Pro Phe
 420 425 430
 Ser Ala Gly Ser Arg Asn Cys Ile Gly Gln Glu Phe Ala Met Ile Glu
 435 440 445
 Leu Lys Val Thr Ile Ala Leu Ile Leu Leu His Phe Arg Val Thr Pro
 450 455 460
 Asp Pro Thr Arg Pro Leu Thr Phe Pro Asn His Phe Ile Leu Lys Pro
 465 470 475 480
 Lys Asn Gly Met Tyr Leu His Leu Lys Lys Leu Ser Glu Cys
 485 490

<210> 29

<211> 1408

<212> DNA

<213> Homo sapiens

<400> 29

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cctgccacta ccgcagagga ctgagggggc ttggcccagc agggaccca gggccttggg 120
ggactgtgtg agctggaaac gtggctggcc agatgggcag caccatggag cccctgggg 180
gtgcgtacct gcacctgggc gccgtgacat cccctgtgtg cacagcccgc gtgctgcagc 240
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agggcacctt ctgcatggac gcctggggct tctgcttcgc cgtctctgcg ctgggtgggtg 360
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ccttcgccat gctggccacc ctgctatgcg cgacggctgc ggtcctgtat ccgctgtact 480
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gctacgtggc caccagtggt tgcgtggccg tctacagcct gtgcttctg gccacagtgg 780
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atcctccagg ctccagccag cttctctgc acagaagccc agcctggctc agccaggagc 1260
tgaccactg gccaccctg agtccaagcc ggggtgggcag tggcacaaca gccctcagc 1320
ccattgactg ggccccattg acgtccttga gcaggaaata aatgctgaca tttatacgt 1380
ccctgcctct ggaccagcag tctcttct 1408
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<210> 30

<211> 344

<212> PRT

<213> Homo sapiens

<400> 30

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Met Gly Ser Thr Met Glu Pro Pro Gly Gly Ala Tyr Leu His Leu Gly
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Ala Val Thr Ser Pro Val Cys Thr Ala Arg Val Leu Gln Leu Ala Phe
      20              25              30

Gly Cys Thr Thr Phe Ser Leu Val Ala His Arg Gly Gly Phe Ala Gly
      35              40              45

Val Gln Gly Thr Phe Cys Met Asp Ala Trp Gly Phe Cys Phe Ala Val
      50              55              60

Ser Ala Leu Val Val Ala Cys Glu Phe Thr Arg Leu His Gly Cys Leu
      65              70              75              80
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Arg Leu Ser Trp Gly Asn Phe Thr Ala Ala Phe Ala Met Leu Ala Thr
 85 90 95
 Leu Leu Cys Ala Thr Ala Ala Val Leu Tyr Pro Leu Tyr Phe Ala Arg
 100 105 110
 Arg Glu Cys Ser Pro Glu Pro Ala Gly Cys Ala Ala Arg Asp Phe Arg
 115 120 125
 Leu Ala Ala Ser Val Phe Ala Gly Leu Leu Phe Leu Ala Tyr Ala Val
 130 135 140
 Glu Val Ala Leu Thr Arg Ala Arg Pro Gly Gln Val Ser Ser Tyr Met
 145 150 155 160
 Ala Thr Val Ser Gly Leu Leu Lys Ile Val Gln Ala Phe Val Ala Cys
 165 170 175
 Ile Ile Phe Gly Ala Leu Val His Asp Ser Arg Tyr Gly Arg Tyr Val
 180 185 190
 Ala Thr Gln Trp Cys Val Ala Val Tyr Ser Leu Cys Phe Leu Ala Thr
 195 200 205
 Val Ala Val Val Ala Leu Ser Val Met Gly His Thr Gly Gly Leu Gly
 210 215 220
 Cys Pro Phe Asp Arg Leu Val Val Val Tyr Thr Phe Leu Ala Val Leu
 225 230 235 240
 Leu Tyr Leu Ser Ala Ala Val Ile Trp Pro Val Phe Cys Phe Asp Pro
 245 250 255
 Lys Tyr Gly Glu Pro Lys Arg Pro Pro Asn Cys Ala Arg Gly Ser Cys
 260 265 270
 Pro Trp Asp Thr Ser Trp Trp Trp Pro Ser Ser Pro Thr Ser Thr Cys
 275 280 285
 Ser Cys Thr Ser Leu Thr Ser Pro Thr Pro Ser Phe Ser Ser Ala Arg
 290 295 300
 Arg Ala Ser Val His Cys Gly His Leu Trp His Trp Glu Gly Ala Arg
 305 310 315 320
 Leu Arg Ala Ala Ala Gly His Arg Ile Trp Val Leu Leu Ala Ser Ala
 325 330 335

Gln Gly Ser Ser Cys Arg Asn Ser
340

<210> 31
<211> 1113
<212> DNA
<213> Homo sapiens

<400> 31
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aagaggggaag tgctacacac tttcaaacaa ccagatctcg acatgggcta ctgccagggt 120
gtgagccagg tcgctgttgt cctgctgatg ttccccaagg agaaagaggc cttcttggca 180
ctagctcagc tgctgaccag caaaaacctg ccagacactg tagatggaca gctgcctatg 240
gggctcaca gccgggccag ccagggtggct ccagagacga catcaagcaa ggtggaccgg 300
ggtgtctcca cagtgtgtgg gaagcctaag gtggtgggga agatctatgg tggccgggac 360
gcagcagctg gccagtggcc atggcaggcc agcctgctct actggggctc gcacctctgt 420
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<210> 32
<211> 356
<212> PRT
<213> Homo sapiens

<400> 32
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35 40 45
Leu Met Phe Pro Lys Glu Lys Glu Ala Phe Leu Ala Leu Ala Gln Leu
50 55 60

Leu Thr Ser Lys Asn Leu Pro Asp Thr Val Asp Gly Gln Leu Pro Met
 65 70 75 80

Gly Pro His Ser Arg Ala Ser Gln Val Ala Pro Glu Thr Thr Ser Ser
 85 90 95

Lys Val Asp Arg Gly Val Ser Thr Val Cys Gly Lys Pro Lys Val Val
 100 105 110

Gly Lys Ile Tyr Gly Gly Arg Asp Ala Ala Ala Gly Gln Trp Pro Trp
 115 120 125

Gln Ala Ser Leu Leu Tyr Trp Gly Ser His Leu Cys Gly Ala Val Leu
 130 135 140

Ile Asp Ser Cys Trp Leu Val Ser Thr Thr His Cys Phe Lys Ser Gln
 145 150 155 160

Ala Pro Lys Asn Tyr Gln Val Leu Leu Gly Asn Ile Gln Leu Tyr His
 165 170 175

Gln Thr Gln His Thr Gln Lys Met Ser Val His Arg Ile Ile Thr His
 180 185 190

Pro Asp Phe Glu Lys Leu His Pro Phe Gly Ser Asp Ile Ala Met Leu
 195 200 205

Gln Leu His Leu Pro Met Asn Phe Thr Ser Tyr Ile Val Pro Val Cys
 210 215 220

Leu Pro Ser Arg Asp Met Gln Leu Pro Ser Asn Val Ser Cys Trp Ile
 225 230 235 240

Thr Gly Trp Gly Met Leu Thr Glu Asp Leu Cys Ser Gln Gly Asp Ser
 245 250 255

Gly Gly Pro Leu Val Cys Tyr Leu Pro Ser Ala Trp Val Leu Val Gly
 260 265 270

Leu Ala Ser Trp Gly Leu Asp Cys Arg His Pro Ala Tyr Pro Ser Ile
 275 280 285

Phe Thr Arg Val Thr Tyr Phe Ile Asn Trp Ile Asp Lys Ile Met Arg
 290 295 300

Leu Thr Pro Leu Ser Asp Pro Ala Leu Ala Pro His Thr Cys Ser Pro
 305 310 315 320

Pro Lys Pro Leu Arg Ala Ala Gly Leu Pro Gly Pro Cys Ala Ala Leu
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Val Leu Pro Gln Thr Trp Leu Leu Leu Pro Leu Thr Leu Arg Ala Pro
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Trp Gln Thr Leu
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<210> 33

<211> 2393

<212> DNA

<213> Homo sapiens

<400> 33

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<210> 34
<211> 510
<212> PRT
<213> Homo sapiens

<400> 34
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35 40 45
Val Ser Pro Thr Gln Asp Ile Arg Leu Trp Val Ser Val Glu Asp Ala
50 55 60
Gln Met His Thr Val Thr Ile Trp Leu Thr Val Arg Pro Asp Met Thr
65 70 75 80
Val Ala Ser Leu Lys Asp Met Val Phe Leu Asp Tyr Gly Phe Pro Pro
85 90 95
Val Leu Gln Gln Trp Val Ile Gly Gln Arg Leu Ala Arg Asp Gln Glu
100 105 110
Thr Leu His Ser His Gly Val Arg Gln Asn Gly Asp Ser Ala Tyr Leu
115 120 125
Tyr Leu Leu Ser Ala Arg Asn Thr Ser Leu Asn Pro Gln Glu Leu Gln
130 135 140
Arg Glu Arg Gln Leu Arg Met Leu Glu Asp Leu Gly Phe Lys Asp Leu
145 150 155 160
Thr Leu Gln Pro Arg Gly Pro Leu Glu Pro Gly Pro Pro Lys Pro Gly

165 170 175
 Val Pro Gln Glu Pro Gly Arg Gly Gln Pro Asp Ala Val Pro Glu Pro
 180 185 190
 Pro Pro Val Gly Trp Gln Cys Pro Gly Cys Thr Phe Ile Asn Lys Pro
 195 200 205
 Thr Arg Pro Gly Cys Glu Met Cys Cys Arg Ala Arg Pro Glu Ala Tyr
 210 215 220
 Gln Val Pro Ala Ser Tyr Gln Pro Asp Glu Glu Glu Arg Ala Arg Leu
 225 230 235 240
 Ala Gly Glu Glu Glu Ala Leu Arg Gln Tyr Gln Gln Arg Lys Gln Gln
 245 250 255
 Gln Gln Glu Gly Asn Tyr Leu Gln His Val Gln Leu Asp Gln Arg Ser
 260 265 270
 Leu Val Leu Asn Thr Glu Pro Ala Glu Cys Pro Val Cys Tyr Ser Val
 275 280 285
 Leu Ala Pro Gly Glu Ala Val Val Leu Arg Glu Cys Leu His Thr Phe
 290 295 300
 Cys Arg Glu Cys Leu Gln Gly Thr Ile Arg Asn Ser Gln Glu Ala Glu
 305 310 315 320
 Val Ser Cys Pro Phe Ile Asp Asn Thr Tyr Ser Cys Ser Gly Lys Leu
 325 330 335
 Leu Glu Arg Glu Ile Lys Ala Leu Leu Thr Pro Glu Asp Tyr Gln Arg
 340 345 350
 Phe Leu Asp Leu Gly Ile Ser Ile Ala Glu Asn Arg Ser Ala Phe Ser
 355 360 365
 Tyr His Cys Lys Thr Pro Asp Cys Lys Gly Trp Cys Phe Phe Glu Asp
 370 375 380
 Asp Val Asn Glu Phe Thr Cys Pro Val Cys Phe His Val Asn Cys Leu
 385 390 395 400
 Leu Cys Lys Ala Ile His Glu Gln Met Asn Cys Lys Glu Tyr Gln Glu
 405 410 415
 Asp Leu Ala Leu Arg Ala Gln Asn Asp Val Ala Ala Arg Gln Thr Thr

420	425	430
Glu Met Leu Lys Val Met Leu Gln Gln Gly Glu Ala Met Arg Cys Pro		
435	440	445
Gln Cys Gln Ile Val Val Gln Lys Lys Asp Gly Cys Asp Trp Ile Arg		
450	455	460
Cys Thr Val Cys His Thr Glu Ile Cys Trp Val Thr Lys Gly Pro Arg		
465	470	475
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Trp Gly Pro Gly Gly Pro Gly Asp Thr Ser Gly Gly Cys Arg Cys Arg		
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Val Asn Gly Ile Pro Cys His Pro Ser Cys Gln Asn Cys His		
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<210> 35
 <211> 2372
 <212> DNA
 <213> Homo sapiens

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2372

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<210> 36

<211> 555

<212> PRT

<213> Homo sapiens

<400> 36

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Trp Ser Pro Ala Ser Pro Arg Arg Pro Gly Gly Ser Ile Ser Gln Glu
          20              25              30

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Ala Arg Ser Pro Pro Gly Gly Trp Ala Gln Pro Arg Gln Met Asp Glu
          35              40              45

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```

Lys Thr Lys Lys Ala Glu Glu Met Ala Leu Ser Leu Thr Arg Ala Val
          50              55              60

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```

Ala Gly Gly Asp Glu Gln Val Ala Met Lys Cys Ala Ile Trp Leu Ala
          65              70              75              80

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```

Glu Gln Arg Val Pro Pro Ser Val Gln Leu Lys Pro Glu Val Ser Pro
          85              90              95

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```

Thr Gln Asp Ile Arg Leu Trp Val Ser Val Glu Asp Ala Gln Met His
          100             105             110

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Thr Val Thr Ile Trp Leu Thr Val Arg Pro Asp Met Thr Val Ala Ser
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Gln Trp Val Ile Gly Gln Arg Leu Ala Arg Asp Gln Glu Thr Leu His		
145	150	155 160
Ser His Gly Val Arg Gln Asn Gly Asp Ser Ala Tyr Leu Tyr Leu Leu		
	165 170	175
Ser Ala Arg Asn Thr Ser Leu Asn Pro Gln Glu Leu Gln Arg Glu Arg		
	180 185	190
Gln Leu Arg Met Leu Glu Asp Leu Gly Phe Lys Asp Leu Thr Leu Gln		
195	200	205
Pro Arg Gly Pro Leu Glu Pro Gly Pro Pro Lys Pro Gly Val Pro Gln		
210	215	220
Glu Pro Gly Arg Gly Gln Pro Asp Ala Val Pro Glu Pro Pro Pro Val		
225	230	235 240
Gly Trp Gln Cys Pro Gly Cys Thr Phe Ile Asn Lys Pro Thr Arg Pro		
	245 250	255
Gly Cys Glu Met Cys Cys Arg Ala Arg Pro Glu Ala Tyr Gln Val Pro		
	260 265	270
Ala Ser Tyr Gln Pro Asp Glu Glu Glu Arg Ala Arg Leu Ala Gly Glu		
	275 280	285
Glu Glu Ala Leu Arg Gln Tyr Gln Gln Arg Lys Gln Gln Gln Gln Glu		
290	295	300
Gly Asn Tyr Leu Gln His Val Gln Leu Asp Gln Arg Ser Leu Val Leu		
305	310	315 320
Asn Thr Glu Pro Ala Glu Cys Pro Val Cys Tyr Ser Val Leu Ala Pro		
	325 330	335
Gly Glu Ala Val Val Leu Arg Glu Cys Leu His Thr Phe Cys Arg Glu		
	340 345	350
Cys Leu Gln Gly Thr Ile Arg Asn Ser Gln Glu Ala Glu Val Ser Cys		
	355 360	365
Pro Phe Ile Asp Asn Thr Tyr Ser Cys Ser Gly Lys Leu Leu Glu Arg		
370	375	380

Glu Ile Lys Ala Leu Leu Thr Pro Glu Asp Tyr Gln Arg Phe Leu Asp
 385 390 395 400
 Leu Gly Ile Ser Ile Ala Glu Asn Arg Ser Ala Phe Ser Tyr His Cys
 405 410 415
 Lys Thr Pro Asp Cys Lys Gly Trp Cys Phe Phe Glu Asp Asp Val Asn
 420 425 430
 Glu Phe Thr Cys Pro Val Cys Phe His Val Asn Cys Leu Leu Cys Lys
 435 440 445
 Ala Ile His Glu Gln Met Asn Cys Lys Glu Tyr Gln Glu Asp Leu Ala
 450 455 460
 Leu Arg Ala Gln Asn Asp Val Ala Ala Arg Gln Thr Thr Glu Met Leu
 465 470 475 480
 Lys Val Met Leu Gln Gln Gly Glu Ala Met Arg Cys Pro Gln Cys Gln
 485 490 495
 Ile Val Val Gln Lys Lys Asp Gly Cys Asp Trp Ile Arg Cys Thr Val
 500 505 510
 Cys His Thr Glu Ile Cys Trp Val Thr Lys Gly Pro Arg Trp Gly Pro
 515 520 525
 Gly Gly Pro Gly Asp Thr Ser Gly Gly Cys Arg Cys Arg Val Asn Gly
 530 535 540
 Ile Pro Cys His Pro Ser Cys Gln Asn Cys His
 545 550 555

<210> 37

<211> 1233

<212> DNA

<213> Homo sapiens

<400> 37

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<210> 38

<211> 401

<212> PRT

<213> Homo sapiens

<400> 38

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20 25 30

Glu Glu Ala Gly Thr Arg Val Lys Glu Asn Leu Pro Val Trp Thr Val
35 40 45

Thr Gly Glu Leu Gln Gly Lys Pro Leu Gly Asn Pro Ala Ala Gly Thr
50 55 60

Met Asn Pro Glu Ser Ser Ile Phe Ile Glu Asp Tyr Leu Lys Tyr Phe
65 70 75 80

Gln Asp Gln Val Ser Arg Glu Asn Leu Leu Gln Leu Leu Thr Asp Asp
85 90 95

Glu Ala Trp Asn Gly Phe Val Ala Ala Ala Glu Leu Pro Arg Asp Glu
100 105 110

Ala Asp Glu Leu Arg Lys Ala Leu Asn Lys Leu Ala Ser His Met Val
115 120 125

Met Lys Asp Lys Asn Arg His Asp Lys Asp Gln Gln His Arg Gln Trp
130 135 140

Phe Leu Lys Glu Phe Pro Arg Leu Lys Arg Glu Leu Glu Asp His Ile
145 150 155 160
Arg Lys Leu Arg Ala Leu Ala Glu Glu Val Glu Gln Val His Arg Gly
165 170 175
Thr Thr Ile Ala Asn Val Val Ser Asn Ser Val Gly Thr Thr Ser Gly
180 185 190
Ile Leu Thr Leu Leu Gly Leu Gly Leu Ala Pro Phe Thr Glu Gly Ile
195 200 205
Ser Phe Val Leu Leu Asp Thr Gly Met Gly Leu Gly Ala Ala Ala Ala
210 215 220
Val Ala Gly Ile Thr Cys Ser Val Val Glu Leu Val Asn Lys Leu Arg
225 230 235 240
Ala Arg Ala Gln Ala Arg Asn Leu Asp Gln Ser Gly Thr Asn Val Ala
245 250 255
Lys Val Met Lys Glu Phe Val Gly Gly Asn Thr Pro Asn Val Leu Thr
260 265 270
Leu Val Asp Asn Trp Tyr Gln Val Thr Gln Gly Ile Gly Arg Asn Ile
275 280 285
Arg Ala Ile Arg Arg Ala Arg Ala Asn Pro Gln Leu Gly Ala Tyr Ala
290 295 300
Pro Pro Pro His Val Ile Gly Arg Ile Ser Ala Glu Gly Gly Glu Gln
305 310 315 320
Val Glu Arg Val Val Glu Gly Pro Ala Gln Ala Met Ser Arg Gly Thr
325 330 335
Met Ile Val Gly Ala Ala Thr Gly Gly Ile Leu Leu Leu Leu Asp Val
340 345 350
Val Ser Leu Ala Tyr Glu Ser Lys His Leu Leu Glu Gly Ala Lys Ser
355 360 365
Glu Ser Ala Glu Glu Leu Lys Lys Arg Ala Gln Glu Leu Glu Gly Lys
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Leu Asn Phe Leu Thr Lys Ile His Glu Met Leu Gln Pro Gly Gln Asp
385 390 395 400

Gln

<210> 39

<211> 1232

<212> DNA

<213> Homo sapiens

<400> 39

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gtgaacaggt tgagagggtt gttgaaggcc ccgccaggc aatgagcaga ggaaccatga 1020
tcgtgggtgc agccactgga ggcattcttc ttctgctgga tgtggtcagc cttgcatatg 1080
agtcaaagca cttgcttgag ggggcaaagt cagagtcagc tgaggagctg aagaagcggg 1140
ctcaggagct ggaggggaag ctcaactttc tcaccaagat ccatgagatg ctgcagccag 1200
gccaagacca atgaccccag agcagtgcag cc                                     1232
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<210> 40

<211> 401

<212> PRT

<213> Homo sapiens

<400> 40

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Met His Ile Ala Gln Asn Ser Trp Ile Leu Leu Ser Leu Cys Gln Arg
  1              5              10             15

Lys Ile Pro Trp Thr Arg Gly Pro Cys Leu Gly Val Arg Val Arg Glu
              20             25             30

Glu Glu Ala Gly Thr Arg Val Lys Glu Asn Leu Pro Val Trp Thr Val
          35             40             45
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Thr Gly Glu Leu Gln Gly Lys Pro Leu Gly Asn Pro Ala Ala Gly Thr
 50 55 60

Met Asn Pro Glu Ser Ser Ile Phe Ile Glu Asp Tyr Leu Lys Tyr Phe
 65 70 75 80

Gln Asp Gln Val Ser Arg Glu Asn Leu Leu Gln Leu Leu Thr Asp Asp
 85 90 95

Glu Ala Trp Asn Gly Phe Val Ala Ala Ala Glu Leu Pro Arg Asp Glu
 100 105 110

Ala Asp Glu Leu Arg Lys Ala Leu Asn Lys Leu Ala Ser His Met Val
 115 120 125

Met Lys Asp Lys Asn Arg His Asp Lys Asp Gln Gln His Arg Gln Trp
 130 135 140

Phe Leu Lys Glu Phe Pro Arg Leu Lys Arg Glu Leu Glu Asp His Ile
 145 150 155 160

Arg Lys Leu Arg Ala Leu Ala Glu Glu Val Glu Gln Val His Arg Gly
 165 170 175

Thr Thr Ile Ala Asn Val Val Ser Asn Ser Val Gly Thr Thr Ser Gly
 180 185 190

Ile Leu Thr Leu Leu Gly Leu Gly Leu Ala Pro Phe Thr Glu Gly Ile
 195 200 205

Ser Phe Val Leu Leu Asp Thr Gly Met Gly Leu Gly Ala Ala Ala Ala
 210 215 220

Val Ala Gly Ile Thr Cys Ser Val Val Glu Leu Val Asn Lys Leu Arg
 225 230 235 240

Ala Arg Ala Gln Ala Arg Asn Leu Asp Gln Ser Gly Thr Asn Val Ala
 245 250 255

Lys Val Met Lys Glu Phe Val Gly Gly Asn Thr Pro Asn Val Leu Thr
 260 265 270

Leu Val Asp Asn Trp Tyr Gln Val Thr Gln Gly Ile Gly Arg Asn Ile
 275 280 285

Arg Ala Ile Arg Arg Ala Arg Ala Asn Pro Gln Leu Gly Ala Tyr Ala
 290 295 300

Pro Pro Pro His Val Ile Gly Arg Ile Ser Ala Glu Gly Gly Glu Gln
 305 310 315 320

Val Glu Arg Val Val Glu Gly Pro Ala Gln Ala Met Ser Arg Gly Thr
 325 330 335

Met Ile Val Gly Ala Ala Thr Gly Gly Ile Leu Leu Leu Leu Asp Val
 340 345 350

Val Ser Leu Ala Tyr Glu Ser Lys His Leu Leu Glu Gly Ala Lys Ser
 355 360 365

Glu Ser Ala Glu Glu Leu Lys Lys Arg Ala Gln Glu Leu Glu Gly Lys
 370 375 380

Leu Asn Phe Leu Thr Lys Ile His Glu Met Leu Gln Pro Gly Gln Asp
 385 390 395 400

Gln

<210> 41

<211> 1351

<212> DNA

<213> Homo sapiens

<400> 41

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 tgatgccacc catcagggcc atggccaggg tcaccaagag accataaatc tggaactttc 180
 cctgtgttct tgcgggtccag tccccgttga aaccttgaaa gtcaaaggaa tggacaagcc 240
 cttcttttcc atagacttca aggttgccgg aggccgctgt cacagcacc acgatgccgc 300
 ctatgatgcc aggaatgccca tgcagattgt taatgccaca tgtgtcctgg atgtgcagcc 360
 gggactccag gaatggggtc aggtatacaa aaccagggt ggagatgatg ccgcagacga 420
 agccgatgat gagggcaccg taaggcatga gcatcatctc agcagcggta cccacggcca 480
 cccctcctgc gagcgtggca ttctggatgt gcaccatgtc cagcttgccc ttcttggtgca 540
 gggcactgga tattgccacc gaggttaagca cgcaggctgc caaggagcag taggtgttga 600
 tggcggctcg gtgctggctg tccccatggt aggatatggc tgagttgaag ctgggccagt 660
 acatccacag gaagaggggtg ccaatcatgg caaagagggtc cgactggtac acagaattct 720
 gtctctcctt gctctgctct aggttgctgc ggtagaggat ccgggtcact gtgagcccaa 780
 agtaggcgcc aaatgtgtgg atggcatgg agcctcctgc atccttcacc tttagcaggt 840
 taaggagaat gaactcatte acagcgaaga gggtcacttg gaagaaagtc atgatgagca 900
 gctgaatggg gctgacttta ccagaactg ccccaaaggc cacgcagaca gaggccacgc 960
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gccgccagcg gaggttggtg ttccaggcca t 1351

<210> 42
<211> 445
<212> PRT
<213> Homo sapiens

<400> 42
Met Ala Trp Asn Thr Asn Leu Arg Trp Arg Leu Pro Leu Thr Cys Leu
1 5 10 15
Leu Leu Gln Val Ile Met Val Ile Leu Phe Gly Val Phe Val Arg Tyr
20 25 30
Asp Phe Glu Ala Asp Ala His Trp Trp Ser Glu Arg Thr His Lys Asn
35 40 45
Leu Ser Asp Met Glu Asn Glu Phe Tyr Tyr Arg Tyr Pro Ser Phe Gln
50 55 60
Asp Val His Val Met Val Phe Val Gly Phe Gly Phe Leu Met Thr Phe
65 70 75 80
Leu Gln Arg Tyr Gly Phe Ser Ala Val Gly Phe Asn Phe Leu Leu Ala
85 90 95
Ala Phe Gly Ile Gln Trp Ala Leu Leu Met Gln Gly Trp Phe His Phe
100 105 110
Leu Gln Asp Arg Tyr Ile Val Val Gly Val Glu Asn Leu Ile Asn Ala
115 120 125
Asp Phe Cys Val Ala Ser Val Cys Val Ala Phe Gly Ala Val Leu Gly
130 135 140
Lys Val Ser Pro Ile Gln Leu Leu Ile Met Thr Phe Phe Gln Val Thr
145 150 155 160
Leu Phe Ala Val Asn Glu Phe Ile Leu Leu Asn Leu Leu Lys Val Lys
165 170 175
Asp Ala Gly Gly Ser Met Thr Ile His Thr Phe Gly Ala Tyr Phe Gly
180 185 190
Leu Thr Val Thr Arg Ile Leu Tyr Arg Arg Asn Leu Glu Gln Ser Lys

195	200	205
Glu Arg Gln Asn Ser Val Tyr Gln Ser Asp Leu Phe Ala Met Ile Gly		
210	215	220
Thr Leu Phe Leu Trp Met Tyr Trp Pro Ser Phe Asn Ser Ala Ile Ser		
225	230	235 240
Tyr His Gly Asp Ser Gln His Arg Ala Ala Ile Asn Thr Tyr Cys Ser		
245	250	255
Leu Ala Ala Cys Val Leu Thr Ser Val Ala Ile Ser Ser Ala Leu His		
260	265	270
Lys Lys Gly Lys Leu Asp Met Val His Ile Gln Asn Ala Thr Leu Ala		
275	280	285
Gly Gly Val Ala Val Gly Thr Ala Ala Glu Met Met Leu Met Pro Tyr		
290	295	300
Gly Ala Leu Ile Ile Gly Phe Val Cys Gly Ile Ile Ser Thr Leu Gly		
305	310	315 320
Phe Val Tyr Leu Thr Pro Phe Leu Glu Ser Arg Leu His Ile Gln Asp		
325	330	335
Thr Cys Gly Ile Asn Asn Leu His Gly Ile Pro Gly Ile Ile Gly Gly		
340	345	350
Ile Val Gly Ala Val Thr Ala Ala Ser Ala Ser Leu Glu Val Tyr Gly		
355	360	365
Lys Glu Gly Leu Val His Ser Phe Asp Phe Gln Gly Phe Asn Gly Asp		
370	375	380
Trp Thr Ala Arg Thr Gln Gly Lys Phe Gln Ile Tyr Gly Leu Leu Val		
385	390	395 400
Thr Leu Ala Met Ala Leu Met Gly Gly Ile Ile Val Gly Leu Ile Leu		
405	410	415
Arg Leu Pro Phe Trp Gly Gln Pro Ser Asp Glu Asn Cys Phe Glu Asp		
420	425	430
Ala Val Tyr Trp Glu Val Ser Ser Arg Asp Leu Ala Pro		
435	440	445

<210> 43
 <211> 1763
 <212> DNA
 <213> Homo sapiens

<400> 43
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 gaactctcga aagggaacga actgcacaat atcgcgggct gcctcctccc ccgtgtggga 180
 ggcgcagcatg cggctgtccc catccaggaa ctccatggca gcgaagtccg cattgcccac 240
 gccacgatg atgatggaca tgggcagctt ggaagcctgc accacggcat gccgtgtctc 300
 ctccatgtca ctgatgacct cgtccgtgat gatgaggagg atgaagtact gcgtggccgt 360
 ccgctgttgt gtggcctggg ccgcaaaccg ggccacgtgg ttgacgatgg gggagaaatt 420
 ggtaggaccg tagaagcggg tgtggggcag gcaagctgag tacgcctggg caataccatc 480
 cacacctgag cagaaggggt tgggtggggt gaagttagat gcaaactcat gggagacctt 540
 ccagtctggg ggtaactggg ccccgaatcc cagagctgga aacatcttat cactgtcgtg 600
 gtcctgaatg atctgcccac cagcccagat ggccgacaga tattcggttg tgcccatagg 660
 gttgatatag tgcaaagagg aagggtcgag gggattcccg ttggaggctg taaagtctat 720
 tccaacggtg aacatgagct ggcagcctcc caggatgtag tcaaggaagg agtagtctcg 780
 gtttatcttg caggatcgca ggatgatgat gcccaggttt ttatagttct tcttcttct 840
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 ctgtgacact gaggtctgga actcgccgat gaagtcattg ccccgatcat tgtcatagtc 960
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 tgtgaatggc ttccacacag ggtccagtgt gtacttgatc acctcagtc tgtggaccag 1080
 catccacttg ccacgtctc ctggttata aaactccaga aagggtctg acttcccaa 1140
 gaggtccttc ttgtccagcc tcctgcccgc caggttagt gtgatgacgc ggttgctgga 1200
 cagctcctgg gcagcgatcg taatcaagcc cttccccgca ggcttgcat tcagcagcag 1260
 cagaggccta gtgatcttct tgcctggagac gatcgtgccc aggtgcagg agaactggcc 1320
 caggaagtea tgctcgtcca gccgcatact ggacttgctc tggtaaaga gcgcgaactt 1380
 gagcttctgt acctcctcga agtggtatgc aagcacgaac ttcttgaga aggcggggtt 1440
 gaggtgtgtg atcgcggttt ctgtcctgtc gtactcgatc catctgccat tgttctctgt 1500
 aaagaggaca cagaaggggt cggacttgga ggtaacatcc cgggtccagta ggttctggcc 1560
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 tgctggggca ccccaactgg gtatgtgggc catgggagcc ggtggcgggt gcaggagtgc 1680
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 ctccgagcca cccgggttat cct 1763

<210> 44
 <211> 549
 <212> PRT
 <213> Homo sapiens

<400> 44
 Met Ala His Ile Pro Ser Gly Gly Ala Pro Ala Ala Gly Ala Ala Pro
 1 5 10 15
 Met Gly Pro Gln Tyr Cys Val Cys Lys Val Glu Leu Ser Val Ser Gly

20	25	30
Gln Asn Leu Leu Asp Arg Asp Val Thr Ser Lys Ser Asp Pro Phe Cys		
35	40	45
Val Leu Phe Thr Glu Asn Asn Gly Arg Trp Ile Glu Tyr Asp Arg Thr		
50	55	60
Glu Thr Ala Ile Asn Asn Leu Asn Pro Ala Phe Ser Lys Lys Phe Val		
65	70	75
		80
Leu Asp Tyr His Phe Glu Glu Val Gln Lys Leu Lys Phe Ala Leu Phe		
85	90	95
Asp Gln Asp Lys Ser Ser Met Arg Leu Asp Glu His Asp Phe Leu Gly		
100	105	110
Gln Phe Ser Cys Ser Leu Gly Thr Ile Val Ser Ser Lys Lys Ile Thr		
115	120	125
Arg Pro Leu Leu Leu Leu Asn Asp Lys Pro Ala Gly Lys Gly Leu Ile		
130	135	140
Thr Ile Ala Ala Gln Glu Leu Ser Asp Asn Arg Val Ile Thr Leu Ser		
145	150	155
		160
Leu Ala Gly Arg Arg Leu Asp Lys Lys Asp Leu Phe Gly Lys Ser Asp		
165	170	175
Pro Phe Leu Glu Phe Tyr Lys Pro Gly Asp Asp Gly Lys Trp Met Leu		
180	185	190
Val His Arg Thr Glu Val Ile Lys Tyr Thr Leu Asp Pro Val Trp Lys		
195	200	205
Pro Phe Thr Val Pro Leu Val Ser Leu Cys Asp Gly Asp Met Glu Lys		
210	215	220
Pro Ile Gln Val Met Cys Tyr Asp Tyr Asp Asn Asp Gly Gly His Asp		
225	230	235
		240
Phe Ile Gly Glu Phe Gln Thr Ser Val Ser Gln Met Cys Glu Ala Arg		
245	250	255
Asp Ser Val Pro Leu Glu Phe Glu Cys Ile Asn Pro Lys Lys Gln Arg		
260	265	270
Lys Lys Lys Asn Tyr Lys Asn Ser Gly Ile Ile Ile Leu Arg Ser Cys		

275		280		285
Lys Ile Asn Arg Asp Tyr Ser Phe Leu Asp Tyr Ile Leu Gly Gly Cys				
290		295		300
Gln Leu Met Phe Thr Val Gly Ile Asp Phe Thr Ala Ser Asn Gly Asn				
305		310		315
				320
Pro Leu Asp Pro Ser Ser Leu His Tyr Ile Asn Pro Met Gly Thr Asn				
		325		330
				335
Glu Tyr Leu Ser Ala Ile Trp Ala Val Gly Gln Ile Ile Gln Asp Tyr				
		340		345
				350
Asp Ser Asp Lys Met Phe Pro Ala Leu Gly Phe Gly Ala Gln Leu Pro				
		355		360
				365
Pro Asp Trp Lys Val Ser His Glu Phe Ala Ile Asn Phe Asn Pro Thr				
		370		375
				380
Asn Pro Phe Cys Ser Gly Val Asp Gly Ile Ala Gln Ala Tyr Ser Ala				
385		390		395
				400
Cys Leu Pro His Ile Arg Phe Tyr Gly Pro Thr Asn Phe Ser Pro Ile				
		405		410
				415
Val Asn His Val Ala Arg Phe Ala Ala Gln Ala Thr Gln Gln Arg Thr				
		420		425
				430
Ala Thr Gln Tyr Phe Ile Leu Leu Ile Ile Thr Asp Gly Val Ile Ser				
		435		440
				445
Asp Met Glu Glu Thr Arg His Ala Val Val Gln Ala Ser Lys Leu Pro				
		450		455
				460
Met Ser Ile Ile Ile Val Gly Val Gly Asn Ala Asp Phe Ala Ala Met				
465		470		475
				480
Glu Phe Leu Asp Gly Asp Ser Arg Met Leu Arg Ser His Thr Gly Glu				
		485		490
				495
Glu Ala Ala Arg Asp Ile Val Gln Phe Val Pro Phe Arg Glu Phe Arg				
		500		505
				510
Asn Ala Ala Lys Glu Thr Leu Ala Lys Ala Val Leu Ala Glu Leu Pro				
		515		520
				525
Gln Gln Val Val Gln Tyr Phe Lys His Lys Asn Leu Pro Pro Thr Ser				

530

535

540

Tyr Glu Asn Pro Thr

545

<210> 45

<211> 1070

<212> DNA

<213> Homo sapiens

<400> 45

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cactttgaag gggagaaggt gttccgtgtt aacgttgaag atgaaaatca cattaacata 120
atccgcgagt tggccacctt tattcagatt gacttctgga agccagattc tgtcacacaa 180
atcaaacctc acagtacagt tgacttccgt gttaaagcag aagatactgt cactgtggag 240
aatgttctaa agcagaatga actacaatac aaggctactga taagcaacct gagaaatgtg 300
gtggaggctc agtttgatag cggggttcgt gcaacaggac acagttatga gaagtacaac 360
aagtgggaaa cgatagaggc ttggactcaa caagtcgcca ctgagaatcc agccctcatc 420
tctcgcagtg ttatcggaac cacatttgag ggacgcgcta tttacctcct gaaggttggc 480
aaagctggac aaaataagcc tgccattttc atggaatgtg gtttccatgc cagagagtgg 540
atttctcctg cattctgcca gtggtttgta agagaggctg ttcgtaccta tggacgtgag 600
atccaagtga cagagcttct cgacaagtta gacttttatg tcctgcctgt gctcaatatt 660
gatggctaca tctacacctg gaccaagagc cgatttttga gaaagacttc gctccacca 720
tactggatct acccttactc atatgcttac aaactcgggtg agaacaatgc tgagttgaat 780
gccctggcta aagctactgt gaaagaactt gcctcactgc acggcaccaa gtacacatat 840
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caaggaatca gatattcctt cacctttgaa cttcgagata caggcagata tggctttctc 960
cttcagaat cccagatccg ggctacctgc gaggagacct tcctggcaat caagtatgtt 1020
gccagctacg tcctggaaca cctgtactag ttgagaaagc tgatggcctt 1070

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<210> 46

<211> 349

<212> PRT

<213> Homo sapiens

<400> 46

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Met Leu Ala Leu Leu Val Leu Val Thr Val Ala Leu Ala Ser Ala His
  1                   5                   10                   15

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His Gly Gly Glu His Phe Glu Gly Glu Lys Val Phe Arg Val Asn Val
      20                   25                   30

```

```

Glu Asp Glu Asn His Ile Asn Ile Ile Arg Glu Leu Ala Thr Phe Ile
      35                   40                   45

```

```

Gln Ile Asp Phe Trp Lys Pro Asp Ser Val Thr Gln Ile Lys Pro His

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65		70		75		80
Ile Ser Asn Leu Arg Asn Val Val Glu Ala Gln Phe Asp Ser Arg Val						
	85		90		95	
Arg Ala Thr Gly His Ser Tyr Glu Lys Tyr Asn Lys Trp Glu Thr Ile						
	100		105		110	
Glu Ala Trp Thr Gln Gln Val Ala Thr Glu Asn Pro Ala Leu Ile Ser						
	115		120		125	
Arg Ser Val Ile Gly Thr Thr Phe Glu Gly Arg Ala Ile Tyr Leu Leu						
	130		135		140	
Lys Val Gly Lys Ala Gly Gln Asn Lys Pro Ala Ile Phe Met Glu Cys						
145		150		155		160
Gly Phe His Ala Arg Glu Trp Ile Ser Pro Ala Phe Cys Gln Trp Phe						
	165		170		175	
Val Arg Glu Ala Val Arg Thr Tyr Gly Arg Glu Ile Gln Val Thr Glu						
	180		185		190	
Leu Leu Asp Lys Leu Asp Phe Tyr Val Leu Pro Val Leu Asn Ile Asp						
	195		200		205	
Gly Tyr Ile Tyr Thr Trp Thr Lys Ser Arg Phe Trp Arg Lys Thr Ser						
	210		215		220	
Leu His Pro Tyr Trp Leu Glu						
225		230				

<210> 49

<211> 693

<212> DNA

<213> Homo sapiens

<400> 49

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aagccagatt ctgtcacaca aatcaaacct cacagtacag ttgacttccg tgtaaagca 180
gaagatactg tcaactgtga gaatgttcta aagcagaatg aactacaata caaggtactg 240
ataagcaacc tgagaaatgt ggtggaggct cagtttgata gccgggttcg tgcaacagga 300
cacagttatg agaagtacaa caagtgggaa acgatagagg cttggactca acaagtcgcc 360
actgagaatc cagccctcat ctctcgaggt gttatcggaa ccacatttga gggacgcgct 420
atttacctcc tgaaggttgg caaagctgga caaaataagc ctgccatttt catggactgt 480
ggtttccatg ccagagagtg gatttctcct gcattctgcc agtgggttgt aagagaggct 540

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gttcgtacca atggacgtga gatccaagt acagagcttc tcgacaagtt agacttttat 600
 gtcctgcctg tgctcaatat tgatggctac atctacacct ggaccaagag ccgattttgg 660
 agaaagactt cgctccaccc atactggctc gag 693

<210> 50
 <211> 231
 <212> PRT
 <213> Homo sapiens

<400> 50

Gly Ser His His Gly Gly Glu His Phe Glu Gly Glu Lys Val Phe Arg
 1 5 10 15
 Val Asn Val Glu Asp Glu Asn His Ile Asn Ile Ile Arg Glu Leu Ala
 20 25 30
 Ser Thr Thr Gln Ile Asp Phe Trp Lys Pro Asp Ser Val Thr Gln Ile
 35 40 45
 Lys Pro His Ser Thr Val Asp Phe Arg Val Lys Ala Glu Asp Thr Val
 50 55 60
 Thr Val Glu Asn Val Leu Lys Gln Asn Glu Leu Gln Tyr Lys Val Leu
 65 70 75 80
 Ile Ser Asn Leu Arg Asn Val Val Glu Ala Gln Phe Asp Ser Arg Val
 85 90 95
 Arg Ala Thr Gly His Ser Tyr Glu Lys Tyr Asn Lys Trp Glu Thr Ile
 100 105 110
 Glu Ala Trp Thr Gln Gln Val Ala Thr Glu Asn Pro Ala Leu Ile Ser
 115 120 125
 Arg Ser Val Ile Gly Thr Thr Phe Glu Gly Arg Ala Ile Tyr Leu Leu
 130 135 140
 Lys Val Gly Lys Ala Gly Gln Asn Lys Pro Ala Ile Phe Met Asp Cys
 145 150 155 160
 Gly Phe His Ala Arg Glu Trp Ile Ser Pro Ala Phe Cys Gln Trp Phe
 165 170 175
 Val Arg Glu Ala Val Arg Thr Asn Gly Arg Glu Ile Gln Val Thr Glu
 180 185 190
 Leu Leu Asp Lys Leu Asp Phe Tyr Val Leu Pro Val Leu Asn Ile Asp

195 200 205
 Gly Tyr Ile Tyr Thr Trp Thr Lys Ser Arg Phe Trp Arg Lys Thr Ser
 210 215 220

 Leu His Pro Tyr Trp Leu Glu
 225 230

<210> 51
 <211> 693
 <212> DNA
 <213> Homo sapiens

<400> 51
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 aagccagatt ctgtcacaca aatcaaacct cacagtacag ttgacttccg tgttaaagca 180
 gaagatactg tcaactgtgga gaatgttcta aagcagaatg aactacaata caaggtactg 240
 ataagcaacc tgagaaatgt ggtggaggct cagtttgata gccgggttcg tgcaacagga 300
 cacagttatg agaagtacaa caagtgggaa acgatagagg cttggactca acaagtcgcc 360
 actgagaatc cagccctcat ctctcgcagt gttatcggaa ccacatttga gggacgcgct 420
 atttacctcc tgaaggttgg caaagctgga caaaataagc ctgccatttt catggactgt 480
 ggtttccatg ccagagagtg gatttctcct gcattctgcc agtggtttgt aagagaggct 540
 gttcgtacct atggacgtga gatccaagtg acagagcttc tcgacaagtt agacttttat 600
 gtctgcctg tgctcaatat tgatggctac atctacacct ggaccaagag ccgatttttg 660
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<210> 52
 <211> 231
 <212> PRT
 <213> Homo sapiens

<400> 52
 Gly Ser His His Gly Gly Glu His Phe Glu Gly Glu Lys Val Phe Arg
 1 5 10 15

 Val Asn Val Glu Asp Glu Asn His Ile Asn Ile Ile Arg Glu Leu Ala
 20 25 30

 Ser Thr Thr Gln Ile Asp Phe Trp Lys Pro Asp Ser Val Thr Gln Ile
 35 40 45

 Lys Pro His Ser Thr Val Asp Phe Arg Val Lys Ala Glu Asp Thr Val
 50 55 60

 Thr Val Glu Asn Val Leu Lys Gln Asn Glu Leu Gln Tyr Lys Val Leu

65	70	75	80
Ile Ser Asn Leu Arg Asn Val Val Glu Ala Gln Phe Asp Ser Arg Val	85	90	95
Arg Ala Thr Gly His Ser Tyr Glu Lys Tyr Asn Lys Trp Glu Thr Ile	100	105	110
Glu Ala Trp Thr Gln Gln Val Ala Thr Glu Asn Pro Ala Leu Ile Ser	115	120	125
Arg Ser Val Ile Gly Thr Thr Phe Glu Gly Arg Ala Ile Tyr Leu Leu	130	135	140
Lys Val Gly Lys Ala Gly Gln Asn Lys Pro Ala Ile Phe Met Asp Cys	145	150	155
Gly Phe His Ala Arg Glu Trp Ile Ser Pro Ala Phe Cys Gln Trp Phe	165	170	175
Val Arg Glu Ala Val Arg Thr Tyr Gly Arg Glu Ile Gln Val Thr Glu	180	185	190
Leu Leu Asp Lys Leu Asp Phe Tyr Val Leu Pro Val Leu Asn Ile Asp	195	200	205
Gly Tyr Ile Tyr Thr Trp Thr Lys Ser Arg Phe Trp Arg Lys Thr Ser	210	215	220
Leu His Pro Tyr Trp Leu Glu	225	230	

<210> 53

<211> 693

<212> DNA

<213> Homo sapiens

<400> 53

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aagccagatt ctgtcacaca aatcaaacct cacagtacag ttgacttccg tgtaaagca 180
gaagatactg tcaactgtgga gaatgttcta aagcagaatg aactacaata caaggtactg 240
ataagcaacc tgagaaatgt ggtggaggct cagtttgata gccgggttcg tgcaacagga 300
cacagttatg agaagtacaa caagtgggaa acgatagagg cttggactca acaagtcgcc 360
actgagaatc cagccctcat ctctcgagc gttatcggaa ccacatttga gggacgcgtt 420
atttacctcc tgaaggttgg caaagctgga caaaataagc ctgccatttt catggactgt 480
ggtttccatg ccagagagtg gatttctcct gcattccgcc agtggtttgt aagagaggct 540

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gttcgtacct atggacgtga gatccaagt acagagcttc tcgacaagtt agacttttat 600
gtcctgcctg tgctcaatat tgatggctac atctacacct ggaccaagag ccgattttgg 660
agaaagactt cgctccaccc atactggctc gag 693

<210> 54

<211> 231

<212> PRT

<213> Homo sapiens

<400> 54

Gly Ser His His Gly Gly Glu His Phe Glu Gly Glu Lys Val Phe Arg
1 5 10 15

Val Asn Val Glu Asp Glu Asn His Ile Asn Ile Ile Arg Glu Leu Ala
20 25 30

Ser Thr Thr Gln Ile Asp Phe Trp Lys Pro Asp Ser Val Thr Gln Ile
35 40 45

Lys Pro His Ser Thr Val Asp Phe Arg Val Lys Ala Glu Asp Thr Val
50 55 60

Thr Val Glu Asn Val Leu Lys Gln Asn Glu Leu Gln Tyr Lys Val Leu
65 70 75 80

Ile Ser Asn Leu Arg Asn Val Val Glu Ala Gln Phe Asp Ser Arg Val
85 90 95

Arg Ala Thr Gly His Ser Tyr Glu Lys Tyr Asn Lys Trp Glu Thr Ile
100 105 110

Glu Ala Trp Thr Gln Gln Val Ala Thr Glu Asn Pro Ala Leu Ile Ser
115 120 125

Arg Ser Val Ile Gly Thr Thr Phe Glu Gly Arg Val Ile Tyr Leu Leu
130 135 140

Lys Val Gly Lys Ala Gly Gln Asn Lys Pro Ala Ile Phe Met Asp Cys
145 150 155 160

Gly Phe His Ala Arg Glu Trp Ile Ser Pro Ala Phe Arg Gln Trp Phe
165 170 175

Val Arg Glu Ala Val Arg Thr Tyr Gly Arg Glu Ile Gln Val Thr Glu
180 185 190

Leu Leu Asp Lys Leu Asp Phe Tyr Val Leu Pro Val Leu Asn Ile Asp

195	200	205
Gly Tyr Ile Tyr Thr Trp Thr Lys Ser Arg Phe Trp Arg Lys Thr Ser		
210	215	220
Leu His Pro Tyr Trp Leu Glu		
225	230	

<210> 55
 <211> 649
 <212> DNA
 <213> Homo sapiens

<400> 55
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 cacaccacac acaaccagtc ccgaaaatgg cacagaaatg gtatcaagaa accccgatca 120
 caaagatacg aatctcttaa gggggtggac cccaagttcc tgaggaacat gcgctttgcc 180
 aagaagcaca acaaaaaggg cctaaagaag atgcaggcca acaatgccaa ggccatgagt 240
 gcacgtgccg aggtatcaaa ggccctcgta aagcccaagg aggttaagcc caagatccca 300
 aagggtgtca gccgcaagct cgatcgactt gcctacattg cccaccccaa gcttgggaag 360
 cgtgctcgtg cccgtattgc caaggggctc aggtgtgtcc ggccaaaggc caaggccaag 420
 gccaaaggcca aggccaagga tcaaaccaag gcccaggctg cagccccagc ttcagttcca 480
 gctcaggctc ccaaacgtac ccaggcccct acaaaggctt cagagtagat atctctgcca 540
 acatgaggac agaaggactg gtgcgacccc ccaccccgc ccctgggcta ccatctgcat 600
 ggggctgggg tcctcctgtg ctactggtac aaataaacct gaggcagga 649

<210> 56
 <211> 161
 <212> PRT
 <213> Homo sapiens

<400> 56
 Met Ala Lys Ser Lys Asn His Thr Thr His Asn Gln Ser Arg Lys Trp
 1 5 10 15
 His Arg Asn Gly Ile Lys Lys Pro Arg Ser Gln Arg Tyr Glu Ser Leu
 20 25 30
 Lys Gly Val Asp Pro Lys Phe Leu Arg Asn Met Arg Phe Ala Lys Lys
 35 40 45
 His Asn Lys Lys Gly Leu Lys Lys Met Gln Ala Asn Asn Ala Lys Ala
 50 55 60
 Met Ser Ala Arg Ala Glu Ala Ile Lys Ala Leu Val Lys Pro Lys Glu
 65 70 75 80

Val Lys Pro Lys Ile Pro Lys Gly Val Ser Arg Lys Leu Asp Arg Leu
85 90 95

Ala Tyr Ile Ala His Pro Lys Leu Gly Lys Arg Ala Arg Ala Arg Ile
100 105 110

Ala Lys Gly Leu Arg Leu Cys Arg Pro Lys Ala Lys Ala Lys Ala Lys
115 120 125

Ala Lys Ala Lys Asp Gln Thr Lys Ala Gln Ala Ala Ala Pro Ala Ser
130 135 140

Val Pro Ala Gln Ala Pro Lys Arg Thr Gln Ala Pro Thr Lys Ala Ser
145 150 155 160

Glu

<210> 57

<211> 580

<212> DNA

<213> Homo sapiens

<400> 57

actcactata gggctcgagc ggcgcttcgg gagccgcggc ttatggtgca gacatggcca 60
agtccaagaa ccacaccaca cacaaccagt cccgaaaatg gcacagaaat ggtatcaaga 120
aaccgccgatc acaaagatac gaatctctta agggggtgga cccaagtgc ctgaggaaca 180
tgcgctttgc caagaagcac aacaaaaagg gcctaaagaa gatgcaggcc aacaatgcca 240
aggccatgag tgcacgtgcc gaggctatca aggcctcgt aaagccaag gaggttaagc 300
ccaagatccc aaagggtgtc agccgcaagc tcgatcgact tgcctacatt gccacccca 360
agcttgggaa gcgtgctcgt gcccgatttg ccaaggggct caggctgtgc cggccaaagg 420
ccaaggccaa ggccaaagcc aaggccaagg atcaaaccaa ggcccaggct gcagccccag 480
cttcagttcc agctcaggct cccaaacgta ccaggcccc tacaaaggct tcagagtaga 540
tatctctgcc aacatgagga cagaaagact ggtgcgaccc 580

<210> 58

<211> 161

<212> PRT

<213> Homo sapiens

<400> 58

Met Ala Lys Ser Lys Asn His Thr Thr His Asn Gln Ser Arg Lys Trp
1 5 10 15

His Arg Asn Gly Ile Lys Lys Pro Arg Ser Gln Arg Tyr Glu Ser Leu

	20		25		30	
Lys Gly Val Asp Pro Lys Phe Leu Arg Asn Met Arg Phe Ala Lys Lys						
	35		40		45	
His Asn Lys Lys Gly Leu Lys Lys Met Gln Ala Asn Asn Ala Lys Ala						
	50		55		60	
Met Ser Ala Arg Ala Glu Ala Ile Lys Ala Leu Val Lys Pro Lys Glu						
	65		70		75	80
Val Lys Pro Lys Ile Pro Lys Gly Val Ser Arg Lys Leu Asp Arg Leu						
		85		90		95
Ala Tyr Ile Ala His Pro Lys Leu Gly Lys Arg Ala Arg Ala Arg Ile						
	100		105		110	
Ala Lys Gly Leu Arg Leu Cys Arg Pro Lys Ala Lys Ala Lys Ala Lys						
	115		120		125	
Ala Lys Ala Lys Asp Gln Thr Lys Ala Gln Ala Ala Ala Pro Ala Ser						
	130		135		140	
Val Pro Ala Gln Ala Pro Lys Arg Thr Gln Ala Pro Thr Lys Ala Ser						
	145		150		155	160

Glu

<210> 59
 <211> 1143
 <212> DNA
 <213> Homo sapiens

<400> 59
 atgaggtcag tgcagatctt cctctcccaa tgccggtttgc tcctttctact agttccgaca 60
 atgctcctta agtctcttgg cgaagatgta atttttcacc ctgaagggga gtttgactcg 120
 tatgaagtca ccattcctga gaagctgagc ttccggggag aggtgcaggg tgtggtcagt 180
 cccgtgtcct acctactgca gttaaaaggc aagaagcacg tcctccattt gtggccaag 240
 agacttctgt tgccccgaca tctgcgcgtt ttctccttca cagaacatgg ggaactgctg 300
 gaggatcatc cttacatacc aaaggactgc aactacatgg gctccgtgaa agagtctctg 360
 gactctaaag ctactataag cacatgcatg gggggtctcc gaggtgtatt taacattgat 420
 gccaaacatt accaaattga gccctcaag gcctctccca gttttgaaca tgtcgtctat 480
 ctctgaaga aagagcagtt tgggaatcag gcagaaaatc tcatgtgctg gggcacaggc 540
 tatcatctat ccatgaaacc catgggaata cctgacctag gtatgataaa tgatggcacc 600
 tcctgtggag aaggccgggt atgttttaaa aaaaattgct tcaatagctc agtcctgcag 660
 tttgactggt tgctgagaa atgcaatacc cggggtgttt gcaacaacag aaaaagctgc 720


```

cactgcatgt atgggtgggc acctccattc tgtgaggaag tggggtatgg aggaagcatt 780
gacagtgggc ctccaggact gctcagaggg gcgattccct cgtcaatttg gggtgtgtcc 840
atcataatgt ttgccttat tttattaatc ctttcagtgg tttttgtgtt tttccggcaa 900
gtgataggaa accacttaaa acccaaacag gaaaaaatgc cactatccaa agcaaaaact 960
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gaagaatctg aagcaaaaac tggacaggaa gaatctaaag caaaaactgg acaggaagaa 1080
tctaaagcaa acattgaaag taaacgaccc aaagcaaaga gtgtcaagaa acaaaaaaag 1140
taa 1143

```

<210> 60

<211> 380

<212> PRT

<213> Homo sapiens

<400> 60

```

Met Arg Ser Val Gln Ile Phe Leu Ser Gln Cys Arg Leu Leu Leu Leu
  1             5             10             15

```

```

Leu Val Pro Thr Met Leu Leu Lys Ser Leu Gly Glu Asp Val Ile Phe
          20             25             30

```

```

His Pro Glu Gly Glu Phe Asp Ser Tyr Glu Val Thr Ile Pro Glu Lys
          35             40             45

```

```

Leu Ser Phe Arg Gly Glu Val Gln Gly Val Val Ser Pro Val Ser Tyr
          50             55             60

```

```

Leu Leu Gln Leu Lys Gly Lys Lys His Val Leu His Leu Trp Pro Lys
          65             70             75             80

```

```

Arg Leu Leu Leu Pro Arg His Leu Arg Val Phe Ser Phe Thr Glu His
          85             90             95

```

```

Gly Glu Leu Leu Glu Asp His Pro Tyr Ile Pro Lys Asp Cys Asn Tyr
          100             105             110

```

```

Met Gly Ser Val Lys Glu Ser Leu Asp Ser Lys Ala Thr Ile Ser Thr
          115             120             125

```

```

Cys Met Gly Gly Leu Arg Gly Val Phe Asn Ile Asp Ala Lys His Tyr
          130             135             140

```

```

Gln Ile Glu Pro Leu Lys Ala Ser Pro Ser Phe Glu His Val Val Tyr
          145             150             155             160

```

```

Leu Leu Lys Lys Glu Gln Phe Gly Asn Gln Ala Glu Asn Leu Met Cys
          165             170             175

```

Trp Gly Thr Gly Tyr His Leu Ser Met Lys Pro Met Gly Ile Pro Asp
180 185 190

Leu Gly Met Ile Asn Asp Gly Thr Ser Cys Gly Glu Gly Arg Val Cys
195 200 205

Phe Lys Lys Asn Cys Val Asn Ser Ser Val Leu Gln Phe Asp Cys Leu
210 215 220

Pro Glu Lys Cys Asn Thr Arg Gly Val Cys Asn Asn Arg Lys Ser Cys
225 230 235 240

His Cys Met Tyr Gly Trp Ala Pro Pro Phe Cys Glu Glu Val Gly Tyr
245 250 255

Gly Gly Ser Ile Asp Ser Gly Pro Pro Gly Leu Leu Arg Gly Ala Ile
260 265 270

Pro Ser Ser Ile Trp Val Val Ser Ile Ile Met Phe Arg Leu Ile Leu
275 280 285

Leu Ile Leu Ser Val Val Phe Val Phe Phe Arg Gln Val Ile Gly Asn
290 295 300

His Leu Lys Pro Lys Gln Glu Lys Met Pro Leu Ser Lys Ala Lys Thr
305 310 315 320

Glu Gln Glu Glu Ser Lys Thr Lys Thr Val Gln Glu Glu Ser Lys Thr
325 330 335

Lys Thr Gly Gln Glu Glu Ser Glu Ala Lys Thr Gly Gln Glu Glu Ser
340 345 350

Lys Ala Lys Thr Gly Gln Glu Glu Ser Lys Ala Asn Ile Glu Ser Lys
355 360 365

Arg Pro Lys Ala Lys Ser Val Lys Lys Gln Lys Lys
370 375 380

<210> 61

<211> 1207

<212> DNA

<213> Homo sapiens

<400> 61

ccgcgggact ccggcggtccc cgccccccag tcctccctcc cctccccctcc agcatgggtgc 60

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tcgcggcccc gctgctgctg ggcttcctgc tcctcgccct ggagctgcgg ccccgggggg 120
aggcggccga gggccccgcg gcggcgggcg cggcggcggc ggcgggcgca gcggcggggg 180
tcggggggga gcgctccagc cggccagccc cgtccgtggc gcccgagccg gacggctgcc 240
ccgtgtgcgt atggcggcag cacagccgcg agctgcgcct agagagcatc aagtcgcaga 300
tcttgagcaa actgcggctc aaggaggcgc ccaacatcag ccgcgaggtg gtgaagcagc 360
tgctgccccaa ggcgccgccg ctgcagcaga tcctggacct acacgacttc cagggcgacg 420
cgctgcagcc cgaggacttc ctggaggagg acgagtacca cgccaccacc gagaccgtca 480
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gtggcacaga cctggctgtc acctccctgg ggccgggagc cgaggggctg catccattca 720
tgagagcttc agtcctagag aacacaaaac gttcccgcg gaacctgggt ctggactgcg 780
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tcaatgacaa gcagcagatt atctacggca agatacctgg catggtgggt gatcgctgtg 1080
gctgctctta agtgggtcac tacaagctgc tggagcaaag acttgggtgg tgggtaactt 1140
aacctcttca cagaggataa aaaatgcttg tgagtatgac agaagggaat aaacaggctt 1200
aaagggt 1207

```

<210> 62

<211> 345

<212> PRT

<213> Homo sapiens

<400> 62

```

Met Val Leu Ala Ala Pro Leu Leu Leu Gly Phe Leu Leu Leu Ala Leu
  1                      5                      10                      15

```

```

Glu Leu Arg Pro Arg Gly Glu Ala Ala Glu Gly Pro Ala Ala Ala Ala
          20                      25                      30

```

```

Ala Ala Ala Ala Ala Ala Ala Ala Gly Val Gly Gly Glu Arg Ser
          35                      40                      45

```

```

Ser Arg Pro Ala Pro Ser Val Ala Pro Glu Pro Asp Gly Cys Pro Val
          50                      55                      60

```

```

Cys Val Trp Arg Gln His Ser Arg Glu Leu Arg Leu Glu Ser Ile Lys
          65                      70                      75                      80

```

```

Ser Gln Ile Leu Ser Lys Leu Arg Leu Lys Glu Ala Pro Asn Ile Ser
          85                      90                      95

```

```

Arg Glu Val Val Lys Gln Leu Leu Pro Lys Ala Pro Pro Leu Gln Gln
          100                      105                      110

```

Ile Leu Asp Leu His Asp Phe Gln Gly Asp Ala Leu Gln Pro Glu Asp
 115 120 125
 Phe Leu Glu Glu Asp Glu Tyr His Ala Thr Thr Glu Thr Val Ile Ser
 130 135 140
 Met Ala Gln Glu Thr Asp Pro Ala Val Gln Thr Asp Gly Ser Pro Leu
 145 150 155 160
 Cys Cys His Phe His Phe Ser Pro Lys Val Met Phe Thr Lys Ser Ile
 165 170 175
 Asp Phe Lys Gln Val Leu His Ser Trp Phe Arg Gln Pro Gln Ser Asn
 180 185 190
 Trp Gly Ile Glu Ile Asn Ala Phe Asp Pro Ser Gly Thr Asp Leu Ala
 195 200 205
 Val Thr Ser Leu Gly Pro Gly Ala Glu Gly Leu His Pro Phe Met Glu
 210 215 220
 Leu Arg Val Leu Glu Asn Thr Lys Arg Ser Arg Arg Asn Leu Gly Leu
 225 230 235 240
 Asp Cys Asp Glu His Ser Ser Glu Ser Arg Cys Cys Arg Tyr Pro Leu
 245 250 255
 Thr Val Asp Phe Glu Ala Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys
 260 265 270
 Arg Tyr Lys Ala Asn Tyr Cys Ser Gly Gln Cys Glu Tyr Met Phe Met
 275 280 285
 Gln Lys Tyr Pro His Thr His Leu Val Gln Gln Ala Asn Pro Arg Gly
 290 295 300
 Ser Ala Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met
 305 310 315 320
 Leu Tyr Phe Asn Asp Lys Gln Gln Ile Ile Tyr Gly Lys Ile Pro Gly
 325 330 335
 Met Val Val Asp Arg Cys Gly Cys Ser
 340 345

<210> 63

<211> 1341
 <212> DNA
 <213> Homo sapiens

<400> 63
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 ctcccaaggg aaactcaggc gtgtgctggt cccaatgtca gtgaaacca gctggggggc 120
 tggccctcg gaggggtca cgcagtgcc taccagtac cttggagaga tccacaactg 180
 gaccgagctg cttgacctct tcaaccacac tttgtctgag tgccacgtgg agctcagcca 240
 gagcaccaag cgcgtgggcc tctttgccct ctacctggcc atgtttgtgg ttgggctggt 300
 ggagaacctc ctggtgatat gcgtaactg ggcgggctca ggccgggcag ggctgatgaa 360
 cctctacatc ctcaacatgg ccatcgcgga cctgggcatt gtctgtctc tgcccggtg 420
 gatgctggag gtcacgtgg actacacctg gctctggggc agcttctcct gccgcttcac 480
 tctactcttc tactttgtca acatgtatag cagcatcttc ttctggtgt gcctcagtgt 540
 cgaccgctat gtcaccctca ccagcgctc cccctcctgg cagcgttacc agcaccgagt 600
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 aacgtacagc acctggggcc tggcggtggc cctgtccacc accatcctgg gcttctgct 780
 gcccttcct ctcatcacag tcttcaatgt gctgacagcc tgccggctgc gccagccagg 840
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 catgctgcac tgtgtcatca acccactcct ttacaacttt ctgagccac acttccgggg 1080
 ccggtcctg aatgtgtag tccattacct tcctaaggac cagaccaagg cgggcacatg 1140
 cgctctctt tctctctgtt ccaccagca ttccatcatc atcaccaagg gtgatagcca 1200
 gcctgtgca gcagcccccc acctgagcc aagcctgagc tttcaggcac accatttgct 1260
 tccaaatact tccccatct ctccactca gcctcttaca cccagctgag gtactagaat 1320
 tcagcggccg ctgaattcta g 1341

<210> 64
 <211> 404
 <212> PRT
 <213> Homo sapiens

<400> 64
 Met Ser Val Lys Pro Ser Trp Gly Pro Gly Pro Ser Glu Gly Val Thr
 1 5 10 15
 Ala Val Pro Thr Ser Asp Leu Gly Glu Ile His Asn Trp Thr Glu Leu
 20 25 30
 Leu Asp Leu Phe Asn His Thr Leu Ser Glu Cys His Val Glu Leu Ser
 35 40 45
 Gln Ser Thr Lys Arg Val Val Leu Phe Ala Leu Tyr Leu Ala Met Phe
 50 55 60

Val	Val	Gly	Leu	Val	Glu	Asn	Leu	Leu	Val	Ile	Cys	Val	Asn	Trp	Arg	65	70	75	80
Gly	Ser	Gly	Arg	Ala	Gly	Leu	Met	Asn	Leu	Tyr	Ile	Leu	Asn	Met	Ala	85	90	95	
Ile	Ala	Asp	Leu	Gly	Ile	Val	Leu	Ser	Leu	Pro	Val	Trp	Met	Leu	Glu	100	105	110	
Val	Thr	Leu	Asp	Tyr	Thr	Trp	Leu	Trp	Gly	Ser	Phe	Ser	Cys	Arg	Phe	115	120	125	
Thr	His	Tyr	Phe	Tyr	Phe	Val	Asn	Met	Tyr	Ser	Ser	Ile	Phe	Phe	Leu	130	135	140	
Val	Cys	Leu	Ser	Val	Asp	Arg	Tyr	Val	Thr	Leu	Thr	Ser	Ala	Ser	Pro	145	150	155	160
Ser	Trp	Gln	Arg	Tyr	Gln	His	Arg	Val	Arg	Arg	Ala	Met	Cys	Ala	Gly	165	170	175	
Ile	Trp	Val	Leu	Ser	Ala	Ile	Ile	Pro	Leu	Pro	Glu	Val	Val	His	Ile	180	185	190	
Gln	Leu	Val	Glu	Gly	Pro	Glu	Pro	Met	Cys	Leu	Phe	Met	Ala	Pro	Phe	195	200	205	
Glu	Thr	Tyr	Ser	Thr	Trp	Ala	Leu	Ala	Val	Ala	Leu	Ser	Thr	Thr	Ile	210	215	220	
Leu	Gly	Phe	Leu	Leu	Pro	Phe	Pro	Leu	Ile	Thr	Val	Phe	Asn	Val	Leu	225	230	235	240
Thr	Ala	Cys	Arg	Leu	Arg	Gln	Pro	Gly	Gln	Pro	Lys	Ser	Arg	Arg	His	245	250	255	
Cys	Leu	Leu	Leu	Cys	Ala	Tyr	Val	Ala	Val	Phe	Val	Met	Cys	Trp	Leu	260	265	270	
Pro	Tyr	His	Val	Thr	Leu	Leu	Leu	Leu	Thr	Leu	His	Gly	Thr	His	Ile	275	280	285	
Ser	Leu	His	Cys	His	Leu	Val	His	Leu	Leu	Tyr	Phe	Phe	Tyr	Asp	Val	290	295	300	
Ile	Asp	Cys	Phe	Ser	Met	Leu	His	Cys	Val	Ile	Asn	Pro	Ile	Leu	Tyr	305	310	315	320

Asn Phe Leu Ser Pro His Phe Arg Gly Arg Leu Leu Asn Ala Val Val
 325 330 335

His Tyr Leu Pro Lys Asp Gln Thr Lys Ala Gly Thr Cys Ala Ser Ser
 340 345 350

Ser Ser Cys Ser Thr Gln His Ser Ile Ile Ile Thr Lys Gly Asp Ser
 355 360 365

Gln Pro Ala Ala Ala Ala Pro His Pro Glu Pro Ser Leu Ser Phe Gln
 370 375 380

Ala His His Leu Leu Pro Asn Thr Ser Pro Ile Ser Pro Thr Gln Pro
 385 390 395 400

Leu Thr Pro Ser

<210> 65

<211> 945

<212> DNA

<213> Homo sapiens

<400> 65

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cgcggtcag gccgggcagg gctgatgaac ctctacatcc tcaacatggc catcgcgga 300
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gcagcagcag cccccaccc tgagccaagc ctgagctttc aggcacacca tttgcttcca 900
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<210> 66

<211> 314

<212> PRT

<213> Homo sapiens

<400> 66
 Met Ser Val Lys Pro Ser Trp Gly Pro Gly Pro Ser Glu Gly Val Thr
 1 5 10 15
 Ala Val Pro Thr Ser Asp Leu Gly Glu Ile His Asn Trp Thr Glu Leu
 20 25 30
 Leu Asp His Leu Phe Asn His Thr Leu Ser Glu Cys His Val Glu Leu
 35 40 45
 Ser Gln Ser Thr Lys Arg Val Val Leu Phe Ala Leu Tyr Leu Ala Met
 50 55 60
 Phe Val Val Gly Leu Val Glu Asn Leu Leu Val Ile Cys Val Asn Trp
 65 70 75 80
 Arg Gly Ser Gly Arg Ala Gly Leu Met Asn Leu Tyr Ile Leu Asn Met
 85 90 95
 Ala Ile Ala Asp Leu Gly Ile Val Leu Ser Leu Pro Val Trp Met Pro
 100 105 110
 Glu Val Thr Leu Asp Tyr Thr Trp Leu Trp Gly Ser Phe Ser Cys Arg
 115 120 125
 Phe Thr His Tyr Phe Tyr Phe Val Asn Met Tyr Ser Ser Ile Phe Phe
 130 135 140
 Leu Val Cys Leu Ser Val Asp Arg Tyr Val Thr Leu Thr Gly Gln Pro
 145 150 155 160
 Lys Ser Arg Arg His Cys Leu Leu Leu Cys Ala Tyr Val Ala Val Phe
 165 170 175
 Val Met Cys Trp Leu Pro Tyr His Val Thr Leu Leu Leu Leu Thr Leu
 180 185 190
 His Gly Thr His Ile Ser Leu His Cys His Leu Val His Leu Leu Tyr
 195 200 205
 Phe Phe Tyr Asp Val Ile Asp Cys Phe Ser Met Leu His Cys Val Ile
 210 215 220
 Asn Pro Ile Leu Tyr Asn Phe Leu Ser Pro His Phe Arg Gly Arg Leu
 225 230 235 240
 Leu Asn Ala Val Val His Tyr Leu Pro Lys Asp Gln Thr Lys Ala Gly
 245 250 255

Thr Cys Ala Ser Ser Ser Ser Cys Ser Thr Gln His Ser Ile Ile Ile
 260 265 270

Thr Lys Gly Asp Ser Gln Pro Ala Ala Ala Ala Ala Pro His Pro Glu
 275 280 285

Pro Ser Leu Ser Phe Gln Ala His His Leu Leu Pro Asn Thr Ser Pro
 290 295 300

Ile Ser Pro Thr Gln Pro Leu Thr Pro Ser
 305 310

<210> 67
 <211> 965
 <212> DNA
 <213> Homo sapiens

<400> 67
 cgatgtcagt gaaaccacgc tgggggcctg gccctcggga gggggtcacc gcagtgccta 60
 ccagtgacct tggagagatc cacaactgga ccgagctgct tgacctcttc aaccacactt 120
 tgtctgagtg ccacgtggag ctcagccaga gcaccaagcg cgtggctctc tttgccctct 180
 acctggccat gtttgtggtt gggtgtgtgg agaacctcct ggtgatatgc gtcaactggc 240
 ggggctcagg cggggcaggg ctgatgaacc tctacatcct caacatggcc atcgcggaacc 300
 tgggcattgt cctgtctctg ccggtgtgga tgctggaggt cacgctggac tacacctggc 360
 tctggggcag cttctcctgc cgttccactc actacttcta ctttgtcaac atgtatagca 420
 gcatcttctt cctgctgccc ttcctcttca tcacagtctt caatgtgctg acagcctgcc 480
 ggctgcgga gccaggacaa cccaagagcc ggcgccactg cctgctgctg tgcgcctacg 540
 tggccgtctt tgatcatgtg tggtgcccct atcatgtgac cctgctgctg ctccactgac 600
 atgggaccca catctccctc cactgccacc tgggtccact gctctacttc ttctatgatg 660
 tcattgactg cttctccatg ctgcactgtg tcatcaacc catcctttac aactttctca 720
 gccacactt cgggggccgg ctctgaatg ctgtagtcca ttaccttct aaggaccaga 780
 ccaagggcgg gcacatgctc ctctcttcc tctgttcca cccagcattc catcatcatc 840
 accaaggtga tagccagcct gctgcagcag cccccaccc tgagccaagc ctgagctttc 900
 aggcacacca tttgcttcca aatacttccc ccatctctcc cactcagcct cttacacca 960
 gctga 965

<210> 68
 <211> 320
 <212> PRT
 <213> Homo sapiens

<400> 68
 Met Ser Val Lys Pro Ser Trp Gly Pro Gly Pro Ser Glu Gly Val Thr
 1 5 10 15

Ala Val Pro Thr Ser Asp Leu Gly Glu Ile His Asn Trp Thr Glu Leu	20	25	30
Leu Asp Leu Phe Asn His Thr Leu Ser Glu Cys His Val Glu Leu Ser	35	40	45
Gln Ser Thr Lys Arg Val Val Leu Phe Ala Leu Tyr Leu Ala Met Phe	50	55	60
Val Val Gly Leu Val Glu Asn Leu Leu Val Ile Cys Val Asn Trp Arg	65	70	75
Gly Ser Gly Arg Ala Gly Leu Met Asn Leu Tyr Ile Leu Asn Met Ala	85	90	95
Ile Ala Asp Leu Gly Ile Val Leu Ser Leu Pro Val Trp Met Leu Glu	100	105	110
Val Thr Leu Asp Tyr Thr Trp Leu Trp Gly Ser Phe Ser Cys Arg Phe	115	120	125
Thr His Tyr Phe Tyr Phe Val Asn Met Tyr Ser Ser Ile Phe Phe Leu	130	135	140
Leu Pro Phe Pro Leu Ile Thr Val Phe Asn Val Leu Thr Ala Cys Arg	145	150	155
Leu Arg Gln Pro Gly Gln Pro Lys Ser Arg Arg His Cys Leu Leu Leu	165	170	175
Cys Ala Tyr Val Ala Val Phe Val Met Cys Trp Leu Pro Tyr His Val	180	185	190
Thr Leu Leu Leu Leu Thr Leu His Gly Thr His Ile Ser Leu His Cys	195	200	205
His Leu Val His Leu Leu Tyr Phe Phe Tyr Asp Val Ile Asp Cys Phe	210	215	220
Ser Met Leu His Cys Val Ile Asn Pro Ile Leu Tyr Asn Phe Leu Ser	225	230	235
Pro His Phe Arg Gly Arg Leu Leu Asn Ala Val Val His Tyr Leu Pro	245	250	255
Lys Asp Gln Thr Lys Gly Gly His Met Arg Leu Leu Phe Leu Leu Phe	260	265	270

His Pro Ala Phe His His His His Gln Gly Asp Ser Gln Pro Ala Ala
 275 280 285

Ala Ala Pro His Pro Glu Pro Ser Leu Ser Phe Gln Ala His His Leu
 290 295 300

Leu Pro Asn Thr Ser Pro Ile Ser Pro Thr Gln Pro Leu Thr Pro Ser
 305 310 315 320

<210> 69
 <211> 549
 <212> DNA
 <213> Homo sapiens

<400> 69
 tatttttttaa ctaaattaat acacctcgaa tgaaccaccc agctcctgtg aaagtcacat 60
 acaagaacat gagatttcct attacacaca atccaaccaa tgtgacctta aataaattta 120
 tagaggagct taagaagtat ggagctacca caatagtaag agtatgtgaa gcaacttatg 180
 acactactct tgtggagaaa gaaggatatcc atgttctcaa ttggcctttt ggtgatggtg 240
 caccaccatc caaccagatt gttgctgatt gggttacattt tgtaaaaatt aagttttgtg 300
 aagaacctgg ttgttatatt gctgttaatt gcattgtagg ccttgggaaa gctccagtac 360
 ttgttgccct agcatcagtt gaagggtgaa tgaaacatga agatgcagta caattcatag 420
 gacaaaagcg gagtggagct tttaaaagca agcaactttt gtatttggag aagtatcatc 480
 ctaaaatgcg gctgcgcttc aaagattcca atagtcatat aaacaactgt tgcattcaat 540
 aaaactggg 549

<210> 70
 <211> 170
 <212> PRT
 <213> Homo sapiens

<400> 70
 Met Asn His Pro Ala Pro Val Lys Val Thr Tyr Lys Asn Met Arg Phe
 1 5 10 15
 Pro Ile Thr His Asn Pro Thr Asn Val Thr Leu Asn Lys Phe Ile Glu
 20 25 30
 Glu Leu Lys Lys Tyr Gly Ala Thr Thr Ile Val Arg Val Cys Glu Ala
 35 40 45
 Thr Tyr Asp Thr Thr Leu Val Glu Lys Glu Gly Ile His Val Leu Asn
 50 55 60

Trp Pro Phe Gly Asp Gly Ala Pro Pro Ser Asn Gln Ile Val Ala Asp
65 70 75 80

Trp Leu His Phe Val Lys Ile Lys Phe Cys Glu Glu Pro Gly Cys Tyr
85 90 95

Ile Ala Val Asn Cys Ile Val Gly Leu Gly Lys Ala Pro Val Leu Val
100 105 110

Ala Leu Ala Ser Val Glu Gly Gly Met Lys His Glu Asp Ala Val Gln
115 120 125

Phe Ile Gly Gln Lys Arg Ser Gly Ala Phe Lys Ser Lys Gln Leu Leu
130 135 140

Tyr Leu Glu Lys Tyr His Pro Lys Met Arg Leu Arg Phe Lys Asp Ser
145 150 155 160

Asn Ser His Ile Asn Asn Cys Cys Ile Gln
165 170

<210> 71

<211> 850

<212> DNA

<213> Homo sapiens

<400> 71

atgaaccacc cagctcctgt gatgaaccac ccagctcctg tgaaagtcac atacaagaac 60
atgagatttc ctattacaca caatccaacc aatgtgacct taaataaatt tatagaggag 120
cttaagaagt atggagctac cacaatagta agagtatgtg aagcaactta tgacactact 180
cttggtggaga aagaaggat ccatgttctc aattggcctt ttggtgatgg tgcaccacca 240
tccaaccaga ttgttgctga ttggttacat tttgtaaaaa ttaagttttg tgaagaacct 300
ggttggttata ttgctgttaa ttgcattgta ggcttggga aagctccagt acttggtgcc 360
ctagcatcag ttgaagggtg aatgaaacat gaagatgcag tacaattcat aggacaaaag 420
cggagtggag cttttaaaag caagcaactt ttgtatttgg agaagtatca tcctaaaatg 480
cggctgcgct tcaaagattc caatagtgtc gcgcttcaaa gattccaata gtgctgcgct 540
tcaaagattc caatagtgtc gcgcttcaaa gattccaata gtgctgcgct tcaaagattc 600
caatagtgtc gcgcttcaaa gattccaata gtgctgcgct tcaaagattc caatagtgtc 660
gcgcttcaaa gattccaata gtgctgcgct tcaaagattc caatagtgtc gcgcttcaaa 720
gattccaata gtgctgcgct tcaaagattc caatagtgtc gcgcttcaaa gattccaata 780
gtgctgcgct tcaaagattc caatagtgtc gcgcttcaaa gattccaata gtgctgcgct 840
tcaaagattc 850

<210> 72

<211> 176

<212> PRT
<213> Homo sapiens

<400> 72

Met Asn His Pro Ala Pro Val Met Asn His Pro Ala Pro Val Lys Val
1 5 10 15
Thr Tyr Lys Asn Met Arg Phe Pro Ile Thr His Asn Pro Thr Asn Val
20 25 30
Thr Leu Asn Lys Phe Ile Glu Glu Leu Lys Lys Tyr Gly Ala Thr Thr
35 40 45
Ile Val Arg Val Cys Glu Ala Thr Tyr Asp Thr Thr Leu Val Glu Lys
50 55 60
Glu Gly Ile His Val Leu Asn Trp Pro Phe Gly Asp Gly Ala Pro Pro
65 70 75 80
Ser Asn Gln Ile Val Ala Asp Trp Leu His Phe Val Lys Ile Lys Phe
85 90 95
Cys Glu Glu Pro Gly Cys Tyr Ile Ala Val Asn Cys Ile Val Gly Leu
100 105 110
Gly Lys Ala Pro Val Leu Val Ala Leu Ala Ser Val Glu Gly Gly Met
115 120 125
Lys His Glu Asp Ala Val Gln Phe Ile Gly Gln Lys Arg Ser Gly Ala
130 135 140
Phe Lys Ser Lys Gln Leu Leu Tyr Leu Glu Lys Tyr His Pro Lys Met
145 150 155 160
Arg Leu Arg Phe Lys Asp Ser Asn Ser Ala Ala Leu Gln Arg Phe Gln
165 170 175

<210> 73
<211> 1144
<212> DNA
<213> Homo sapiens

<400> 73

ttccgaccgc tgcgcgcggc tcctgggctg tcacagtctc ccgttgccgc cgatcatgtcc 60

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cggcagctgt cgcgggcccc gccagccacg gtgctgggcg ccatggagat ggggcgcccgc 120
atggacgcgc ccaccagcgc cgcagtcacg cgcgccttcc tggagcgcgg ccacaccgag 180
atagacacgg ccttcctgta cagcgacggc cagtccgaga ccatccttgg cggcctgggg 240
ctccgaatgg gcagcagcga ctgcagagtg aaaattgcta ccaaggccaa tccatggatt 300
gggaactccc tgaagcctga cagtgtccga tcccagctgg agacgtcact gaagcggtcg 360
cagtgtccca gagtggacct cttctatcta catgcacctg accacagcgc cccggtggaa 420
gagacactgc gtgcctgcca ccagctgcac caggagggca agttcgtgga gcttggcctc 480
tccaactatg cgcctggga agtggccgag atctgtaccc tctgcaagag caacggctgg 540
atcctgcccc ctgtgtacca gggcatgtac agcgccacca cccggcaggt ggaaacggag 600
ctcttcccct gcctcaggca ctttgactg aggttctatg cctacaacc tctggctgac 660
cagagccctg agggatgtgg cagcttctgg ggcactctgg gcccgggggc tgattgctgc 720
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cccgtgggcc gcttctttgg gactcagtgg gcagagatct acaggaatca gttctggaag 840
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ttggcagcgg cagaggaagg gccctggag ccggtgtcg tggacgcctt taatcaagcc 1080
tggcatttgt ttgccacga atgtccaac tacttcatct aagctcattg tggctcaggc 1140
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<210> 74

<211> 355

<212> PRT

<213> Homo sapiens

<400> 74

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Met Ser Arg Gln Leu Ser Arg Ala Arg Pro Ala Thr Val Leu Gly Ala
  1             5             10             15

```

```

Met Glu Met Gly Arg Arg Met Asp Ala Pro Thr Ser Ala Ala Val Thr
          20             25             30

```

```

Arg Ala Phe Leu Glu Arg Gly His Thr Glu Ile Asp Thr Ala Phe Leu
      35             40             45

```

```

Tyr Ser Asp Gly Gln Ser Glu Thr Ile Leu Gly Gly Leu Gly Leu Arg
      50             55             60

```

```

Met Gly Ser Ser Asp Cys Arg Val Lys Ile Ala Thr Lys Ala Asn Pro
      65             70             75             80

```

```

Trp Ile Gly Asn Ser Leu Lys Pro Asp Ser Val Arg Ser Gln Leu Glu
          85             90             95

```

```

Thr Ser Leu Lys Arg Leu Gln Cys Pro Arg Val Asp Leu Phe Tyr Leu
      100            105            110

```

His Ala Pro Asp His Ser Ala Pro Val Glu Glu Thr Leu Arg Ala Cys
 115 120 125

His Gln Leu His Gln Glu Gly Lys Phe Val Glu Leu Gly Leu Ser Asn
 130 135 140

Tyr Ala Ala Trp Glu Val Ala Glu Ile Cys Thr Leu Cys Lys Ser Asn
 145 150 155 160

Gly Trp Ile Leu Pro Thr Val Tyr Gln Gly Met Tyr Ser Ala Thr Thr
 165 170 175

Arg Gln Val Glu Thr Glu Leu Phe Pro Cys Leu Arg His Phe Gly Leu
 180 185 190

Arg Phe Tyr Ala Tyr Asn Pro Leu Ala Asp Gln Ser Pro Glu Gly Cys
 195 200 205

Gly Ser Phe Trp Gly Thr Leu Gly Pro Gly Ala Asp Cys Cys Leu Pro
 210 215 220

Ala Gly Gly Leu Leu Thr Gly Lys Tyr Lys Tyr Glu Asp Lys Asp Gly
 225 230 235 240

Lys Gln Pro Val Gly Arg Phe Phe Gly Thr Gln Trp Ala Glu Ile Tyr
 245 250 255

Arg Asn Gln Phe Trp Lys Glu His His Phe Glu Gly Ile Ala Leu Val
 260 265 270

Glu Lys Ala Leu Gln Ala Ala Tyr Gly Ala Ser Ala Pro Ser Met Thr
 275 280 285

Ser Ala Ala Leu Arg Trp Met Tyr His His Ser Gln Leu Gln Gly Ala
 290 295 300

His Gly Asp Ala Val Ile Leu Gly Met Ser Ser Leu Glu Gln Leu Glu
 305 310 315 320

Gln Asn Leu Ala Ala Ala Glu Glu Gly Pro Leu Glu Pro Ala Val Val
 325 330 335

Asp Ala Phe Asn Gln Ala Trp His Leu Phe Ala His Glu Cys Pro Asn
 340 345 350

Tyr Phe Ile
 355

<210> 75
 <211> 2171
 <212> DNA
 <213> Homo sapiens

<400> 75
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 gctgcaggac tgggggtgaag agaccgagga cggcgcggtg tacagtgtct ccctgcggcg 120
 gcagcgcagt cagcgtcag atcaccagag gtcaggagtt ggacaggctc ccagcccat 180
 tgccaatacc ttcctccact atcgaaccag caaggtgagg gtgctgaggg cagcgcgcct 240
 ggagcggctg gtgggagagt tgggtgtttg agaccgtgag caggacccca gcttcatgcc 300
 cgccttcctg gccacctacc ggacctttgt acccactgcc tgctgctgg gctttctgct 360
 gccaccaatg ccaccgcccc cacctcccg ggtagagatc aagaagacag cggtaacaaga 420
 tctgagcttc aacaagaacc tgagggctgt ggtgtcagtg ctgggctcct ggctgcagga 480
 ccaccctcag gatttccgag acccccctgc ccattcggac ctgggcagtg tccgaacctt 540
 tctgggctgg gcggccccag ggagtgtgta ggctcaaaaa gcagagaagc ttctggaaga 600
 ttttttgag gaggtgagc gagagcagga agaggagccg cctcagggtg ggtcaggacc 660
 tcccagagtt gcccaactt ctgaccaga ctcttcagag gcctgcgcg aggaagagga 720
 agggctcatg cctcaaggtc cccagctcct ggacttcagc gtggacgagg tggccgagca 780
 gctgaccctc atagacttg agctcttctc caaggtgagg ctctacgagt gcttgggctc 840
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 cgtggcccag ttcaacaccg tgaccggctg tgtgctgggt tccgtgctcg gagcaccggg 960
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 ccgagaactg cggaacttct cctccttgcg cgccatcctg tccgccctgc aatctaacc 1080
 catctaccgg ctcaagcgca gctggggggc agtgagccg gaaccgctat ctactttcag 1140
 gaaactttcg cagattttct ccgatgagaa caaccacctc agcagcagag agattctttt 1200
 ccaggaggag gccactgagg gatcccaaga agaggacaac accccaggca gcctgccctc 1260
 aaaaccaccc ccaggccctg tcccctacct tggcaccttc cttacggacc tggttatgct 1320
 ggacacagcc ctgccggata tgttgagggg ggatctcatt aactttgaga agaggaggaa 1380
 ggagtgggag atcctggccc gcatccagca gctgcagagg cgctgtcaga gctacacct 1440
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 gagctaccgg ctctccggg tcattgagcc accagctgcc tcctgcccc gctccccacg 1560
 catccgacgg cggatcagcc tcaccaagcg tctcagtgcg aagcttgccc gagagaaaag 1620
 ctcatcacct agtgggagtc ccggggaccc ctcatcccc acctccagtg tgtccccagg 1680
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 ccccgtaacc ctagaccct ttagcgccc ggtccctcta ccggcgagc agagctcgga 1860
 ggcccggtgc atccggtca gcatcgacaa tgaccacggg aacctgtatc gaagcatctt 1920
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 gattcctgac aatgccaacg tcttctatgc catgagtcca gtcgccccca gagacttcat 2100
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 tgtcctctcc a 2171

<210> 76
 <211> 708

<212> PRT

<213> Homo sapiens

<400> 76

Met Glu Arg Thr Ala Gly Lys Glu Leu Ala Ala Pro Leu Gln Asp Trp
1 5 10 15

Gly Glu Glu Thr Glu Asp Gly Ala Val Tyr Ser Val Ser Leu Arg Arg
20 25 30

Gln Arg Ser Gln Arg Ser Asp His Gln Arg Ser Gly Val Gly Gln Ala
35 40 45

Pro Ser Pro Ile Ala Asn Thr Phe Leu His Tyr Arg Thr Ser Lys Val
50 55 60

Arg Val Leu Arg Ala Ala Arg Leu Glu Arg Leu Val Gly Glu Leu Val
65 70 75 80

Phe Gly Asp Arg Glu Gln Asp Pro Ser Phe Met Pro Ala Phe Leu Ala
85 90 95

Thr Tyr Arg Thr Phe Val Pro Thr Ala Cys Leu Leu Gly Phe Leu Leu
100 105 110

Pro Pro Met Pro Pro Pro Pro Pro Gly Val Glu Ile Lys Lys Thr
115 120 125

Ala Val Gln Asp Leu Ser Phe Asn Lys Asn Leu Arg Ala Val Val Ser
130 135 140

Val Leu Gly Ser Trp Leu Gln Asp His Pro Gln Asp Phe Arg Asp Pro
145 150 155 160

Pro Ala His Ser Asp Leu Gly Ser Val Arg Thr Phe Leu Gly Trp Ala
165 170 175

Ala Pro Gly Ser Ala Glu Ala Gln Lys Ala Glu Lys Leu Leu Glu Asp
180 185 190

Phe Leu Glu Glu Ala Glu Arg Glu Gln Glu Glu Glu Pro Pro Gln Val
195 200 205

Trp Ser Gly Pro Pro Arg Val Ala Gln Thr Ser Asp Pro Asp Ser Ser
210 215 220

Glu Ala Cys Ala Glu Glu Glu Glu Gly Leu Met Pro Gln Gly Pro Gln
225 230 235 240

Leu Leu Asp Phe Ser Val Asp Glu Val Ala Glu Gln Leu Thr Leu Ile
 245 250 255
 Asp Leu Glu Leu Phe Ser Lys Val Arg Leu Tyr Glu Cys Leu Gly Ser
 260 265 270
 Val Trp Ser Gln Arg Asp Arg Pro Gly Ala Ala Gly Ala Ser Pro Thr
 275 280 285
 Val Arg Ala Thr Val Ala Gln Phe Asn Thr Val Thr Gly Cys Val Leu
 290 295 300
 Gly Ser Val Leu Gly Ala Pro Gly Leu Ala Ala Pro Gln Arg Ala Gln
 305 310 315 320
 Arg Leu Glu Lys Trp Ile Arg Ile Ala Gln Arg Cys Arg Glu Leu Arg
 325 330 335
 Asn Phe Ser Ser Leu Arg Ala Ile Leu Ser Ala Leu Gln Ser Asn Pro
 340 345 350
 Ile Tyr Arg Leu Lys Arg Ser Trp Gly Ala Val Ser Arg Glu Pro Leu
 355 360 365
 Ser Thr Phe Arg Lys Leu Ser Gln Ile Phe Ser Asp Glu Asn Asn His
 370 375 380
 Leu Ser Ser Arg Glu Ile Leu Phe Gln Glu Glu Ala Thr Glu Gly Ser
 385 390 395 400
 Gln Glu Glu Asp Asn Thr Pro Gly Ser Leu Pro Ser Lys Pro Pro Pro
 405 410 415
 Gly Pro Val Pro Tyr Leu Gly Thr Phe Leu Thr Asp Leu Val Met Leu
 420 425 430
 Asp Thr Ala Leu Pro Asp Met Leu Glu Gly Asp Leu Ile Asn Phe Glu
 435 440 445
 Lys Arg Arg Lys Glu Trp Glu Ile Leu Ala Arg Ile Gln Gln Leu Gln
 450 455 460
 Arg Arg Cys Gln Ser Tyr Thr Leu Ser Pro His Pro Pro Ile Leu Ala
 465 470 475 480
 Ala Leu His Ala Gln Asn Gln Leu Thr Glu Glu Gln Ser Tyr Arg Leu
 485 490 495

Ser Arg Val Ile Glu Pro Pro Ala Ala Ser Cys Pro Ser Ser Pro Arg
500 505 510

Ile Arg Arg Arg Ile Ser Leu Thr Lys Arg Leu Ser Ala Lys Leu Ala
515 520 525

Arg Glu Lys Ser Ser Ser Pro Ser Gly Ser Pro Gly Asp Pro Ser Ser
530 535 540

Pro Thr Ser Ser Val Ser Pro Gly Ser Pro Pro Ser Ser Pro Arg Ser
545 550 555 560

Arg Asp Ala Pro Ala Gly Ser Pro Pro Ala Ser Pro Gly Pro Gln Gly
565 570 575

Pro Ser Thr Lys Leu Pro Leu Ser Leu Asp Leu Pro Ser Pro Arg Ser
580 585 590

Pro Val Thr Leu Asp Pro Phe Ser Ala Arg Val Pro Leu Pro Ala Gln
595 600 605

Gln Ser Ser Glu Ala Arg Val Ile Arg Val Ser Ile Asp Asn Asp His
610 615 620

Gly Asn Leu Tyr Arg Ser Ile Leu Leu Thr Ser Gln Asp Lys Ala Pro
625 630 635 640

Ser Val Val Arg Arg Ala Leu Gln Lys His Asn Val Pro Gln Pro Trp
645 650 655

Ala Cys Asp Tyr Gln Leu Phe Gln Val Leu Pro Gly Asp Arg Leu Leu
660 665 670

Ile Pro Asp Asn Ala Asn Val Phe Tyr Ala Met Ser Pro Val Ala Pro
675 680 685

Arg Asp Phe Met Leu Arg Arg Lys Glu Gly Thr Arg Asn Thr Leu Ser
690 695 700

Val Ser Pro Ser
705

<210> 77

<211> 717

<212> DNA

<213> Homo sapiens

<400> 77

gaggcggcgc cgcaggggat tgagggggtg actgagcgtt gcgagcctta gctttctccc 60
gaacgccagc gctgaggaca cgatgtcgcg gctctccgcg tctgtctttt gggccgccac 120
ctgcctgggc gtgctctgcg tgctgtccgc ggacaagaac acgacccagc acccgaacgt 180
gacgacttta gcgcccatct ccaacgtaaa atcattgatt tcatgcatct ctcccccaa 240
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taatactacc tgcttttgga tagaatgtcc cccaacagat gagagctatt gttcacataa 360
ctcaacagtt agtgattgtc aagtggggaa cagcacagac ttctgttccg gtaagtattc 420
atattggctg cttggaagca ttccagctaa acccacagtt cagccctccc cttctacaac 480
ttccaagaca gttactacat caggtacaac aaataacact gtgactccaa cctcacaacc 540
tgtgcgaaag tctacctttg atgcagccag ttctattgga ggaattgtcc tggctctggg 600
tgtgcaggct gtaattttct ttctttataa attctgcaaa tctaaagaac gaaattacca 660
cactctgtaa acagacccat tgaattaata aggactggtg attcatttgt gtaactc 717

<210> 78

<211> 195

<212> PRT

<213> Homo sapiens

<400> 78

Met Ser Arg Leu Ser Arg Ser Leu Leu Trp Ala Ala Thr Cys Leu Gly
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Val Leu Cys Val Leu Ser Ala Asp Lys Asn Thr Thr Gln His Pro Asn
20 25 30
Val Thr Thr Leu Ala Pro Ile Ser Asn Val Lys Ser Leu Ile Ser Cys
35 40 45
Ile Ser Pro Pro Asn Ser Pro Glu Thr Cys Glu Gly Arg Asn Ser Cys
50 55 60
Val Ser Cys Phe Asn Val Ser Val Val Asn Thr Thr Cys Phe Trp Ile
65 70 75 80
Glu Cys Pro Pro Thr Asp Glu Ser Tyr Cys Ser His Asn Ser Thr Val
85 90 95
Ser Asp Cys Gln Val Gly Asn Thr Thr Asp Phe Cys Ser Gly Lys Tyr
100 105 110
Ser Tyr Trp Leu Leu Gly Ser Ile Pro Ala Lys Pro Thr Val Gln Pro
115 120 125
Ser Pro Ser Thr Thr Ser Lys Thr Val Thr Thr Ser Gly Thr Thr Asn
130 135 140

Asn Thr Val Thr Pro Thr Ser Gln Pro Val Arg Lys Ser Thr Phe Asp
 145 150 155 160

Ala Ala Ser Phe Ile Gly Gly Ile Val Leu Val Leu Gly Val Gln Ala
 165 170 175

Val Ile Phe Phe Leu Tyr Lys Phe Cys Lys Ser Lys Glu Arg Asn Tyr
 180 185 190

His Thr Leu
 195

<210> 79

<211> 2082

<212> DNA

<213> Homo sapiens

<400> 79

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 cattggcaag tgactgtcta ttcacatctc tcttctgtt gttgagtgag tgaggaggag 180
 agcctgccgg ggatccacag ctcccagttt ccaactcactc attacacagt gctcttggcc 240
 ctgcatgtgc tgtcacggcc atttggggtc tatatcctgt ctcttagagg acagggacta 300
 aatctctcaa attcaggttt ctctgtgtc cctacctggg gcccgggccg ggctgttttt 360
 ctctgtttca aatgccaggg ctacttatgg actcctattc aacctgcaaa accctacttg 420
 aatgctccct cagttctgaa gcctccctgg ctgctccttc cagcctcccc acaacaacaa 480
 cagcaccacc actatataat ggctaaatct gttgagcagt tgccatgggc cagacactgt 540
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 ttggaaaacc cagccctcta cctggacaca gtccagagcc tatggattcc tgaagagccc 720
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<210> 80

<211> 410

<212> PRT

<213> Homo sapiens

<400> 80

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Tyr Met Asp Met Phe Ser Ser Leu Ile Leu Thr Thr Pro Arg Val Ser
 20 25 30

Pro Lys Leu Gly Tyr Pro Leu Ala Asn Ser His His Tyr Ser Ile Lys
 35 40 45

Ser Leu Trp Gly Glu Lys Leu Glu Asn Pro Ala Leu Tyr Leu Asp Thr
 50 55 60

Val Gln Ser Leu Trp Ile Pro Glu Glu Pro Pro Val Pro Thr Gly Gly
 65 70 75 80

Ser Val Arg Ile Lys Lys Asp Pro Glu Leu Val Val Thr Asp Leu Arg
 85 90 95

Phe Gly Thr Ile Pro Val Arg Leu Phe Gln Pro Lys Ala Ala Ser Ser
 100 105 110

Arg Pro Arg Arg Gly Ile Ile Phe Tyr His Gly Gly Ala Thr Val Phe
 115 120 125

Gly Ser Leu Asp Cys Tyr His Gly Leu Cys Asn Tyr Leu Ala Arg Glu
 130 135 140

Thr Glu Ser Val Leu Leu Met Ile Gly Tyr Arg Lys Leu Pro Asp His
 145 150 155 160

His Ser Pro Ala Leu Phe Gln Asp Cys Met Asn Ala Ser Ile His Phe
 165 170 175

Leu Lys Ala Leu Glu Thr Tyr Gly Val Asp Pro Ser Arg Val Val Val
 180 185 190
 Cys Gly Glu Ser Val Gly Gly Ala Ala Val Ala Ala Ile Thr Gln Ala
 195 200 205
 Leu Val Gly Arg Ser Asp Leu Pro Arg Ile Arg Ala Gln Val Leu Ile
 210 215 220
 Tyr Pro Val Val Gln Ala Phe Cys Leu Gln Ser Pro Ser Phe Gln Gln
 225 230 235 240
 Asn Gln Asn Val Pro Leu Leu Ser Arg Lys Phe Met Val Thr Ser Leu
 245 250 255
 Cys Asn Tyr Leu Ala Ile Asp Leu Ser Trp Arg Asp Ala Ile Leu Asn
 260 265 270
 Gly Thr Cys Val Pro Pro Asp Val Trp Arg Lys Tyr Glu Lys Trp Leu
 275 280 285
 Thr Pro Asp Asn Ile Pro Lys Lys Phe Lys Asn Thr Gly Tyr Gln Pro
 290 295 300
 Trp Ser Pro Gly Pro Phe Asn Glu Ala Ala Tyr Leu Glu Ala Lys His
 305 310 315 320
 Met Leu Asp Val Glu Asn Ser Pro Leu Ile Ala Asp Asp Glu Val Ile
 325 330 335
 Ala Gln Leu Pro Glu Ala Phe Leu Val Ser Cys Glu Asn Asp Ile Leu
 340 345 350
 Arg Asp Asp Ser Leu Leu Tyr Lys Lys Arg Leu Glu Asp Gln Gly Val
 355 360 365
 Arg Val Thr Trp Tyr His Leu Tyr Asp Gly Phe His Gly Ser Ile Ile
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 Phe Phe Asp Lys Lys Ala Leu Ser Phe Pro Cys Ser Leu Lys Ile Val
 385 390 395 400
 Asn Ala Val Val Ser Tyr Ile Lys Gly Ile
 405 410

<210> 81
 <211> 1008

<212> DNA

<213> Homo sapiens

<400> 81

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<210> 82

<211> 307

<212> PRT

<213> Homo sapiens

<400> 82

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Ala Glu Glu Leu Leu Gly Phe Ser Tyr Leu His Glu Phe Gln Val Leu
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Leu Phe Ala Leu Ile Leu Leu Ile Tyr Val Leu Met Leu Leu Gly Asn
      20             25             30

Leu Ala Ile Ile Ser Phe Ile Cys Leu Asp Ser Arg Leu His Ser Pro
      35             40             45

Met Tyr Phe Phe Leu Cys Asn Phe Ser Leu Met Glu Met Val Val Thr
      50             55             60

Ser Thr Val Val His Arg Met Leu Ala Asp Leu Leu Ser Thr His Lys
      65             70             75             80

Thr Met Ser Leu Ala Lys Cys Leu Thr Gln Ser Phe Phe Tyr Phe Ser
      85             90             95

Leu Gly Ser Ala Asn Phe Leu Ile Leu Met Val Met Ala Phe Asp Arg
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100 105 110
 Tyr Val Ala Ile Cys His Pro Leu Arg Tyr Pro Thr Ile Thr Asn Gly
 115 120 125
 Pro Val Cys Val Lys Leu Val Val Ala Cys Trp Val Val Gly Phe Leu
 130 135 140
 Ser Ile Val Ser Pro Thr Leu Gln Lys Thr Arg Leu Trp Phe Cys Gly
 145 150 155 160
 Pro Asn Ile Ile Gly His Tyr Phe Cys Asp Ser Ala Pro Leu Leu Lys
 165 170 175
 Leu Ala Cys Ser Asp Thr Arg His Ile Glu Arg Met Asp Leu Phe Leu
 180 185 190
 Ser Leu Leu Phe Val Leu Thr Thr Met Leu Leu Ile Ile Leu Ser Tyr
 195 200 205
 Ile Leu Ile Val Ala Ala Val Leu His Ile Pro Ser Ser Ser Gly Cys
 210 215 220
 Gln Lys Ala Phe Ser Thr Cys Ala Pro His Leu Thr Val Val Val Leu
 225 230 235 240
 Gly Tyr Gly Ser Ala Ile Phe Ile Tyr Val Arg Pro Gly Lys Gly His
 245 250 255
 Ser Thr Tyr Leu Asn Lys Ala Val Ala Met Val Thr Ala Met Val Thr
 260 265 270
 Pro Phe Leu Asn Pro Phe Ile Phe Thr Phe Arg Asn Glu Lys Val Lys
 275 280 285
 Glu Val Ile Glu Asp Val Thr Lys Arg Ile Phe Leu Gly Asp Pro Ala
 290 295 300
 Ala Cys Arg
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<210> 83
 <211> 2233
 <212> DNA
 <213> Homo sapiens

<400> 83

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tgagaaaaaa aaa 2233

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<210> 84

<211> 528

<212> PRT

<213> Homo sapiens

<400> 84

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1

5

10

15

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 20 25 30
 Trp Gly Ser Leu Leu Ile Ile Leu Lys Asn Glu Gly Phe Tyr Ser Ser
 35 40 45
 Thr Cys Pro Ala Glu Ser Ser Thr Asn Thr Thr Gln Asp Glu Gln Arg
 50 55 60
 Arg Trp Pro Gly Cys Asp Gln Gln Asp Glu Met Leu Asn Leu Gly Phe
 65 70 75 80
 Thr Ile Gly Ser Phe Val Leu Ser Ala Thr Thr Leu Pro Leu Gly Ile
 85 90 95
 Leu Met Asp Arg Phe Gly Pro Arg Pro Val Arg Leu Val Gly Ser Ala
 100 105 110
 Cys Phe Thr Ala Ser Cys Thr Leu Met Ala Leu Ala Ser Arg Asp Val
 115 120 125
 Glu Ala Leu Ser Pro Leu Ile Phe Leu Ala Leu Ser Leu Asn Gly Phe
 130 135 140
 Gly Gly Ile Cys Leu Thr Phe Thr Ser Leu Lys Leu Ile Tyr Asp Ala
 145 150 155 160
 Gly Val Ala Phe Val Val Ile Met Phe Thr Trp Ser Gly Leu Ala Cys
 165 170 175
 Leu Ile Phe Leu Asn Cys Thr Leu Asn Trp Pro Ile Glu Ala Phe Pro
 180 185 190
 Ala Pro Glu Glu Val Asn Tyr Thr Lys Lys Ile Lys Leu Ser Gly Leu
 195 200 205
 Ala Leu Asp His Lys Val Thr Gly Asp Leu Phe Tyr Thr His Val Thr
 210 215 220
 Thr Met Gly Gln Arg Leu Ser Gln Lys Ala Pro Ser Leu Glu Asp Gly
 225 230 235 240
 Ser Asp Ala Phe Met Ser Pro Gln Asp Val Arg Gly Thr Ser Glu Asn
 245 250 255
 Leu Pro Glu Arg Ser Val Pro Leu Arg Lys Ser Leu Cys Ser Pro Thr
 260 265 270

Phe Leu Trp Ser Leu Leu Thr Met Cys Met Thr Gln Leu Arg Ile Ile
275 280 285

Phe Tyr Met Ala Ala Val Asn Lys Met Leu Glu Tyr Leu Val Thr Gly
290 295 300

Gly Gln Glu His Glu Thr Asn Glu Gln Gln Lys Val Ala Glu Thr
305 310 315 320

Val Gly Phe Tyr Ser Ser Val Phe Gly Ala Met Gln Leu Leu Cys Leu
325 330 335

Leu Thr Cys Pro Leu Ile Gly Tyr Ile Met Asp Trp Arg Ile Lys Asp
340 345 350

Cys Val Asp Ala Pro Thr Gln Gly Thr Val Leu Gly Asp Ala Arg Asp
355 360 365

Gly Val Ala Thr Lys Ser Ile Arg Pro Arg Tyr Cys Lys Ile Gln Lys
370 375 380

Leu Thr Asn Ala Ile Ser Ala Phe Thr Leu Thr Asn Leu Leu Leu Val
385 390 395 400

Gly Phe Gly Ile Thr Cys Leu Ile Asn Asn Leu His Leu Gln Phe Val
405 410 415

Thr Phe Val Leu His Thr Ile Val Arg Gly Phe Phe His Ser Ala Cys
420 425 430

Gly Ser Leu Tyr Ala Ala Val Phe Pro Ser Asn His Phe Gly Thr Leu
435 440 445

Thr Gly Leu Gln Ser Leu Ile Ser Ala Val Phe Ala Leu Leu Gln Gln
450 455 460

Pro Leu Phe Met Ala Met Val Gly Pro Leu Lys Gly Glu Pro Phe Trp
465 470 475 480

Val Asn Leu Gly Leu Leu Leu Phe Ser Leu Leu Gly Phe Leu Leu Pro
485 490 495

Ser Tyr Leu Phe Tyr Tyr Arg Ala Arg Leu Gln Gln Glu Tyr Ala Ala
500 505 510

Asn Gly Met Gly Pro Leu Lys Val Leu Ser Gly Ser Glu Val Thr Ala
515 520 525

<210> 85
 <211> 415
 <212> DNA
 <213> Homo sapiens

<400> 85
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 cgctgacctc cgcttgctac atccagaact gcccctggg aggcaagagg gccgcgccgg 120
 aagagctggg ctgcttcgtg ggcaccgccg aagcgctgcg ctgccaggag gagaactacc 180
 tgccgtcgcc ctgccagtcc ggccagaagg cgtgcgggag cgggggccgc tgcgcggtct 240
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 ccttctccca gcgctgaaac ttgatggctc cgaacaccct cgaagcgcg cactcgcttc 360
 ccccatagcc accccagaaa tggtgaaaat aaaataaagc aggtttttct cctct 415

<210> 86
 <211> 99
 <212> PRT
 <213> Homo sapiens

<400> 86
 Met Ala Gly Pro Ser Leu Ala Cys Cys Leu Leu Gly Leu Leu Ala Leu
 1 5 10 15
 Thr Ser Ala Cys Tyr Ile Gln Asn Cys Pro Leu Gly Gly Lys Arg Ala
 20 25 30
 Ala Pro Glu Glu Leu Gly Cys Phe Val Gly Thr Ala Glu Ala Leu Arg
 35 40 45
 Cys Gln Glu Glu Asn Tyr Leu Pro Ser Pro Cys Gln Ser Gly Gln Lys
 50 55 60
 Ala Cys Gly Ser Gly Gly Arg Cys Ala Val Leu Gly Leu Cys Cys Ser
 65 70 75 80
 Pro Asp Gly Cys His Ala Asp Pro Ala Cys Asp Ala Glu Ala Thr Phe
 85 90 95
 Ser Gln Arg

<210> 87
 <211> 201
 <212> DNA
 <213> Homo sapiens

<400> 87
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 gagaaattca gtaagtcgaa actgaagaag acagaaatgc aagagaaaaa tccacagcct 120
 tccaaggaat ggatcgaaca ggagaagcaa gcaggcttcg taatgaggcg tgcacacca 180
 atatgcacta agggcgaata a 201

<210> 88
 <211> 50
 <212> PRT
 <213> Homo sapiens

<400> 88
 Met Asp Glu Ile Glu Lys Phe Ser Lys Ser Lys Leu Lys Lys Thr Glu
 1 5 10 15
 Met Gln Glu Lys Asn Pro Gln Pro Ser Lys Glu Trp Ile Glu Gln Glu
 20 25 30
 Lys Gln Ala Gly Phe Val Met Arg Arg Ala Ser Pro Ile Cys Thr Lys
 35 40 45
 Gly Glu
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<210> 89
 <211> 246
 <212> DNA
 <213> Homo sapiens

<400> 89
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 gagaaattca gtaagtcgaa actgaagaag acagaaatgc aagagaaaaa tccacagcct 120
 tccaaggaat ggatcgaaca ggagaagcaa gcaggcttcg taatgaggcg tgcacgccca 180
 atatgcactg ttcattccac aaagcattgc tttctatattt acttctttta gctgttttaac 240
 tttgaa 246

<210> 90
 <211> 66
 <212> PRT
 <213> Homo sapiens

<400> 90

Met Ser Asp Lys Ser Asn Met Asp Glu Ile Glu Lys Phe Ser Lys Ser
1 5 10 15

Lys Leu Lys Lys Thr Glu Met Gln Glu Lys Asn Pro Gln Pro Ser Lys
20 25 30

Glu Trp Ile Glu Gln Glu Lys Gln Ala Gly Phe Val Met Arg Arg Ala
35 40 45

Ser Pro Ile Cys Thr Val His Ser Thr Lys His Cys Phe Leu Phe Tyr
50 55 60

Phe Phe
65

<210> 91

<211> 201

<212> DNA

<213> Homo sapiens

<400> 91

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tccaaggaat ggatcgaaca ggagaagcaa gcaggcttcg taatgaggcg tgcacacca 180
atatgcacta agggcgaata a 201

<210> 92

<211> 56

<212> PRT

<213> Homo sapiens

<400> 92

Met Ser Asp Lys Ser Asn Met Asp Glu Ile Glu Lys Phe Ser Lys Ser
1 5 10 15

Lys Leu Lys Lys Thr Glu Met Gln Glu Lys Asn Pro Gln Pro Ser Lys
20 25 30

Glu Trp Ile Glu Gln Glu Lys Gln Ala Gly Phe Val Met Arg Arg Ala
35 40 45

Ser Pro Ile Cys Thr Lys Gly Glu
50 55

<210> 93
 <211> 457
 <212> DNA
 <213> Homo sapiens

<400> 93
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 gccgtttggc aaaaccact gtgaccatca gtacagatgg agatgtcatc acaataaaaa 180
 caaaagcat ctttaaaaat aatgagatct cctttaagct gggagaagag tttgaggaaa 240
 tcacgccagg tggccacaaa acaaagagta aagtaacctt agataaggag tccctgattc 300
 aagttcagga ctgggatggc aaagaaacca ccataacgag aaagctgggtg gatgggaaaa 360
 tgggtggtgga aagtactgtg aacagtgtta tctgtacacg aacatacgag aaagtatcat 420
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<210> 94
 <211> 140
 <212> PRT
 <213> Homo sapiens

<400> 94
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 Ser Glu Asp Tyr Met Lys Glu Leu Gly Ile Gly Arg Ala Ser Arg Lys
 20 25 30
 Leu Gly Arg Leu Ala Lys Pro Thr Val Thr Ile Ser Thr Asp Gly Asp
 35 40 45
 Val Ile Thr Ile Lys Thr Lys Ser Ile Phe Lys Asn Asn Glu Ile Ser
 50 55 60
 Phe Lys Leu Gly Glu Glu Phe Glu Glu Ile Thr Pro Gly Gly His Lys
 65 70 75 80
 Thr Lys Ser Lys Val Thr Leu Asp Lys Glu Ser Leu Ile Gln Val Gln
 85 90 95
 Asp Trp Asp Gly Lys Glu Thr Thr Ile Thr Arg Lys Leu Val Asp Gly
 100 105 110
 Lys Met Val Val Glu Ser Thr Val Asn Ser Val Ile Cys Thr Arg Thr
 115 120 125
 Tyr Glu Lys Val Ser Ser Asn Ser Val Ser Asn Ser

130

135

140

<210> 95

<211> 408

<212> DNA

<213> Homo sapiens

<400> 95

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acagtaacta  ttagtgttga  tgggaaaatg  atgaccataa  gaacagaaag  ttctttccag  180
gacactaaga  tctccttcaa  gctgggggaa  gaatttgatg  aaactacagc  agacaaccgg  240
aaagtaaaga  gcaccataac  attagagaat  ggctcaatga  ttcacgtcca  aaaatggctt  300
ggcaaagaga  caacaatcaa  aagaaaaatt  gtggatgaaa  aaatggtagt  ggaatgtaaa  360
atgaataata  ttgtcagcac  cagaatctac  gaaaagggtg  gaagaaag           408

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<210> 96

<211> 130

<212> PRT

<213> Homo sapiens

<400> 96

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Met Val Glu Pro Phe Leu Gly Thr Trp Lys Leu Val Ser Ser Glu Asn
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Phe Glu Asp Tyr Met Lys Glu Leu Gly Phe Ala Ala Arg Asn Met Ala
      20              25              30

Gly Leu Val Lys Pro Thr Val Thr Ile Ser Val Asp Gly Lys Met Met
      35              40              45

Thr Ile Arg Thr Glu Ser Ser Phe Gln Asp Thr Lys Ile Ser Phe Lys
      50              55              60

Leu Gly Glu Glu Phe Asp Glu Thr Thr Ala Asp Asn Arg Lys Val Lys
      65              70              75              80

Ser Thr Ile Thr Leu Glu Asn Gly Ser Met Ile His Val Gln Lys Trp
      85              90              95

Leu Gly Lys Glu Thr Thr Ile Lys Arg Lys Ile Val Asp Glu Lys Met
      100             105             110

Val Val Glu Cys Lys Met Asn Asn Ile Val Ser Thr Arg Ile Tyr Glu
      115             120             125

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Lys Val
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<210> 97
<211> 459
<212> DNA
<213> Homo sapiens

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tcaatgattc acgtccaaaa atggcttggc aaagagacaa caatcaaaag aaaaattgtg 360
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<210> 98
<211> 133
<212> PRT
<213> Homo sapiens

<400> 98
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20 25 30
Asn Met Ala Gly Leu Val Lys Pro Thr Val Thr Ile Ser Val Asp Gly
35 40 45
Lys Met Met Thr Ile Arg Thr Glu Ser Ser Phe Gln Asp Thr Lys Ile
50 55 60
Ser Phe Lys Leu Gly Glu Glu Phe Asp Glu Thr Thr Ala Asp Asn Arg
65 70 75 80
Lys Val Lys Ser Thr Ile Thr Leu Glu Asn Gly Ser Met Ile His Val
85 90 95
Gln Lys Trp Leu Gly Lys Glu Thr Thr Ile Lys Arg Lys Ile Val Asp
100 105 110
Glu Lys Met Val Val Glu Cys Lys Met Asn Asn Ile Val Ser Thr Arg

115

120

125

Ile Tyr Glu Lys Val
130

<210> 99

<211> 1238

<212> DNA

<213> Homo sapiens

<400> 99

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<210> 100

<211> 411

<212> PRT

<213> Homo sapiens

<400> 100

Thr Cys Ser Pro Glu Thr Ser Phe Ser Leu Ser Lys Glu Ala Pro Arg
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Glu His Leu Asp His Gln Ala Ala His Gln Pro Phe Pro Arg Pro Arg
20 25 30

Phe Arg Gln Glu Thr Gly His Pro Ser Leu Gln Arg Asp Phe Pro Arg

35	40	45
Ser Phe Leu Leu Asp Leu Pro Asn Phe Pro Asp Leu Ser Lys Ala Asp		
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Ile Asn Gly Gln Asn Pro Asn Ile Gln Val Thr Ile Glu Val Val Asp		
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Gly Pro Asp Ser Glu Ala Asp Lys Asp Gln His Pro Glu Asn Lys Pro		
	85 90	95
Ser Trp Ser Val Pro Ser Pro Asp Trp Arg Ala Trp Trp Gln Arg Ser		
	100 105	110
Leu Ser Leu Ala Arg Ala Asn Ser Gly Asp Gln Asp Tyr Lys Tyr Asp		
	115 120	125
Ser Thr Ser Asp Asp Ser Asn Phe Leu Asn Pro Pro Arg Gly Trp Asp		
	130 135	140
His Thr Ala Pro Gly His Arg Thr Phe Glu Thr Lys Asp Gln Pro Glu		
145	150 155	160
Tyr Asp Ser Thr Asp Gly Glu Gly Asp Trp Ser Leu Trp Ser Val Cys		
	165 170	175
Ser Val Thr Cys Gly Asn Gly Asn Gln Lys Arg Thr Arg Ser Cys Gly		
	180 185	190
Tyr Ala Cys Thr Ala Thr Glu Ser Arg Thr Cys Asp Arg Pro Asn Cys		
	195 200	205
Pro Gly Ile Glu Asp Thr Phe Arg Thr Ala Ala Thr Glu Val Ser Leu		
	210 215	220
Leu Ala Gly Ser Glu Glu Phe Asn Ala Thr Lys Leu Phe Glu Val Asp		
225	230 235	240
Thr Asp Ser Cys Glu Arg Trp Met Ser Cys Lys Ser Glu Phe Leu Lys		
	245 250	255
Lys Tyr Met His Lys Val Met Asn Asp Leu Pro Ser Cys Pro Cys Ser		
	260 265	270
Tyr Pro Thr Glu Val Ala Tyr Ser Thr Ala Asp Ile Phe Asp Arg Ile		
	275 280	285
Lys Arg Lys Asp Phe Arg Trp Lys Asp Ala Ser Gly Pro Lys Glu Lys		

290	295	300
Leu Glu Ile Tyr Lys Pro Thr Ala Arg Tyr Cys Ile Arg Ser Met Leu		
305	310	315 320
Ser Leu Glu Ser Thr Thr Leu Ala Ala Gln His Cys Cys Tyr Gly Asp		
325	330	335
Asn Met Gln Leu Ile Thr Arg Gly Lys Gly Ala Gly Thr Pro Asn Leu		
340	345	350
Ile Gly Thr Glu Phe Ser Ala Glu Leu His Tyr Lys Val Asp Val Leu		
355	360	365
Pro Trp Ile Ile Cys Lys Gly Asp Trp Ser Arg Tyr Asn Glu Ala Arg		
370	375	380
Pro Pro Asn Asn Gly Gln Glu Cys Thr Glu Ser Pro Ser Asp Glu Asp		
385	390	395 400
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<210> 101
 <211> 1463
 <212> DNA
 <213> Homo sapiens

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<210> 102

<211> 454

<212> PRT

<213> Homo sapiens

<400> 102

Met Ala Gly Tyr Leu Ser Glu Ser Asp Phe Val Met Val Glu Glu Gly
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Phe Ser Thr Arg Asp Leu Leu Lys Glu Leu Thr Leu Gly Ala Ser Gln
 20 25 30

Asp Glu Val Ala Ala Phe Phe Val Ala Asp Leu Gly Ala Ile Val Arg
 35 40 45

Lys His Phe Cys Phe Leu Lys Cys Leu Pro Arg Val Arg Pro Phe Tyr
 50 55 60

Ala Val Lys Cys Asn Ser Ser Pro Gly Val Leu Lys Val Leu Ala Gln
 65 70 75 80

Leu Gly Leu Gly Phe Ser Cys Ala Asn Lys Ala Glu Met Glu Leu Val
 85 90 95

Gln His Ile Gly Ile Pro Ala Ser Lys Ile Ile Cys Ala Asn Pro Cys
 100 105 110

Lys Gln Ile Ala Gln Ile Lys Tyr Ala Ala Lys His Gly Ile Gln Leu
 115 120 125

Leu Ser Phe Asp Asn Glu Met Glu Leu Ala Lys Val Val Lys Ser His
 130 135 140

Pro Ser Ala Lys Met Val Leu Cys Ile Ala Thr Asp Asp Ser His Ser
 145 150 155 160

Leu Ser Cys Leu Ser Leu Lys Phe Gly Val Ser Leu Lys Ser Cys Arg
 165 170 175

His Leu Leu Glu Asn Ala Lys Lys His His Val Glu Val Val Gly Val
 180 185 190
 Ser Phe His Ile Gly Ser Gly Cys Pro Asp Pro Gln Ala Tyr Ala Gln
 195 200 205
 Ser Ile Ala Asp Ala Arg Leu Val Phe Glu Met Gly Thr Glu Leu Gly
 210 215 220
 His Lys Met His Val Leu Asp Leu Gly Gly Gly Phe Pro Gly Thr Glu
 225 230 235 240
 Gly Ala Lys Val Arg Phe Glu Glu Ile Ala Ser Val Ile Asn Ser Ala
 245 250 255
 Leu Asp Leu Tyr Phe Pro Glu Gly Cys Gly Val Asp Ile Phe Ala Glu
 260 265 270
 Leu Gly Arg Tyr Tyr Val Thr Ser Ala Phe Thr Val Ala Val Ser Ile
 275 280 285
 Ile Ala Lys Lys Glu Val Leu Leu Asp Gln Pro Gly Arg Glu Glu Glu
 290 295 300
 Asn Gly Ser Thr Ser Lys Thr Ile Val Tyr His Leu Asp Glu Gly Val
 305 310 315 320
 Tyr Gly Ile Phe Asn Ser Val Leu Phe Asp Asn Ile Cys Pro Thr Pro
 325 330 335
 Ile Leu Gln Lys Lys Pro Ser Thr Glu Gln Pro Leu Tyr Ser Ser Ser
 340 345 350
 Leu Trp Gly Pro Ala Val Asp Gly Cys Asp Cys Val Ala Glu Gly Leu
 355 360 365
 Trp Leu Pro Gln Leu His Val Gly Asp Trp Leu Val Phe Asp Asn Met
 370 375 380
 Gly Ala Tyr Thr Val Gly Met Gly Ser Pro Phe Trp Gly Thr Gln Ala
 385 390 395 400
 Cys His Ile Thr Tyr Ala Met Ser Arg Val Ala Trp Arg Arg Gln Leu
 405 410 415
 Met Ala Ala Glu Gln Glu Asp Asp Val Glu Gly Val Cys Lys Pro Leu
 420 425 430

Ser Cys Gly Trp Glu Ile Thr Asp Thr Leu Cys Val Gly Pro Val Phe
 435 440 445

Thr Pro Ala Ser Ile Met
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<210> 103
 <211> 1613
 <212> DNA
 <213> Homo sapiens

<400> 103
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 ctctgggggc ctcacaggcc accacggcag agatggagtt ggtccagcat attggaatcc 180
 ctgccagtaa gatcatctgc gccaaaccct gtaagcaaatt tgcacagatc aaatatgctg 240
 ccaagcatgg gatccagctg ctgagctttg acaatgagat ggagctggca aaggtggtaa 300
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<210> 104
 <211> 402
 <212> PRT
 <213> Homo sapiens

<400> 104

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 20 25 30
 Ala Thr Thr Ala Glu Met Glu Leu Val Gln His Ile Gly Ile Pro Ala
 35 40 45
 Ser Lys Ile Ile Cys Ala Asn Pro Cys Lys Gln Ile Ala Gln Ile Lys
 50 55 60
 Tyr Ala Ala Lys His Gly Ile Gln Leu Leu Ser Phe Asp Asn Glu Met
 65 70 75 80
 Glu Leu Ala Lys Val Val Lys Ser His Pro Ser Ala Lys Met Val Leu
 85 90 95
 Cys Ile Ala Thr Asp Asp Ser His Ser Leu Ser Cys Leu Ser Leu Lys
 100 105 110
 Phe Gly Val Ser Leu Lys Ser Cys Arg His Leu Leu Glu Asn Ala Lys
 115 120 125
 Lys His His Val Glu Val Val Gly Val Ser Phe His Ile Gly Ser Gly
 130 135 140
 Cys Pro Asp Pro Gln Ala Tyr Ala Gln Ser Ile Ala Asp Ala Arg Leu
 145 150 155 160
 Val Phe Glu Met Gly Thr Glu Leu Gly His Lys Met His Val Leu Asp
 165 170 175
 Leu Gly Gly Gly Phe Pro Gly Thr Glu Gly Ala Lys Val Arg Phe Glu
 180 185 190
 Glu Ile Ala Ser Val Ile Asn Ser Ala Leu Asp Leu Tyr Phe Pro Glu
 195 200 205
 Gly Cys Gly Val Asp Ile Phe Ala Glu Leu Gly Arg Tyr Tyr Val Thr
 210 215 220
 Ser Ala Phe Thr Val Ala Val Ser Ile Ile Ala Lys Lys Glu Val Leu
 225 230 235 240
 Leu Asp Gln Pro Gly Arg Glu Glu Glu Asn Gly Ser Thr Ser Lys Thr
 245 250 255

Ile Val Tyr His Leu Asp Glu Gly Val Tyr Gly Ile Phe Asn Ser Val
260 265 270

Leu Phe Asp Asn Ile Cys Pro Thr Pro Ile Leu Gln Lys Lys Pro Ser
275 280 285

Thr Glu Gln Pro Leu Tyr Ser Ser Ser Leu Trp Gly Pro Ala Val Asp
290 295 300

Gly Cys Asp Cys Val Ala Glu Gly Leu Trp Leu Pro Gln Leu His Val
305 310 315 320

Gly Asp Trp Leu Val Phe Asp Asn Met Gly Ala Tyr Thr Val Gly Met
325 330 335

Gly Ser Pro Phe Trp Gly Thr Gln Ala Cys His Ile Thr Tyr Ala Met
340 345 350

Ser Arg Val Ala Trp Glu Ala Leu Arg Arg Gln Leu Met Ala Ala Glu
355 360 365

Gln Glu Asp Asp Val Glu Gly Val Cys Lys Pro Leu Ser Cys Gly Trp
370 375 380

Glu Ile Thr Asp Thr Leu Cys Val Gly Pro Val Phe Thr Pro Ala Ser
385 390 395 400

Ile Met

<210> 105

<211> 679

<212> DNA

<213> Homo sapiens

<400> 105

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679

<210> 106

<211> 218

<212> PRT

<213> Homo sapiens

<400> 106

Met Ala Gly Tyr Leu Ser Glu Ser Asp Phe Val Met Val Glu Glu Gly
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Phe Ser Thr Arg Asp Leu Leu Lys Glu Leu Thr Leu Gly Ala Ser Gln
20 25 30

Ala Thr Thr Asp Glu Val Ala Ala Phe Phe Val Ala Asp Leu Gly Ala
35 40 45

Ile Val Arg Lys His Phe Cys Phe Leu Lys Cys Leu Pro Arg Val Arg
50 55 60

Pro Phe Tyr Ala Val Lys Cys Asn Ser Ser Pro Gly Val Leu Lys Val
65 70 75 80

Leu Ala Gln Leu Gly Leu Gly Phe Ser Cys Ala Asn Ile Cys Pro Thr
85 90 95

Pro Ile Leu Gln Lys Lys Pro Ser Thr Glu Gln Pro Leu Tyr Ser Ser
100 105 110

Ser Leu Trp Gly Pro Ala Val Asp Gly Cys Asp Cys Val Ala Glu Gly
115 120 125

Leu Trp Leu Pro Gln Leu His Val Gly Asp Trp Leu Val Phe Asp Asn
130 135 140

Met Gly Ala Tyr Thr Val Gly Met Gly Ser Pro Phe Trp Gly Thr Gln
145 150 155 160

Ala Cys His Ile Thr Tyr Ala Met Ser Arg Val Ala Trp Glu Ala Leu
165 170 175

Arg Arg Gln Leu Met Ala Ala Glu Gln Glu Asp Asp Val Glu Gly Val
180 185 190

Cys Lys Pro Leu Ser Cys Gly Trp Glu Ile Thr Asp Thr Leu Cys Val
195 200 205

Gly Pro Val Phe Thr Pro Ala Ser Ile Met

210

215

<210> 107

<211> 2972

<212> DNA

<213> Homo sapiens

<400> 107

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<210> 108

<211> 760

<212> PRT

<213> Homo sapiens

<400> 108

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Met Leu Gln Ile Thr Glu Trp Arg Phe Leu Ala Arg Asp Glu Gly Glu
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Ser Ala Val Ala Glu Asp Pro Thr Trp Gly Glu Asp Glu Glu Pro Ser
      20             25            30

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```

Ala Cys Thr Thr Asp Ser Trp Ala Gln Gly Ser Val Pro Val Leu His
      35             40            45

```

```

Ala Ser Thr Ser Glu Gly Leu Glu Asn Phe Gln Gly Glu Val His Ser
      50             55            60

```

```

Ser Gly Ala Ser Pro Asp Ser Ser Ala Ile Ala Pro Ala Leu Pro Phe
      65             70            75            80

```

```

Pro Thr Ser His Cys Pro Ser Ala Phe Pro Gln Asp Pro Gly Gly Val
      85             90            95

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```

Asp Arg Ile Pro Leu Gly Arg Ser Trp Met Gly Arg Gly Ser Gln Glu
      100            105           110

```

```

Gln Met Glu Ser Trp Glu Pro Ser Pro Gln Leu Arg Val Thr Ser Ala
      115            120           125

```

```

Pro Pro Pro Thr Ser Glu Leu Phe Gln Glu Ala Gly Pro Gly Gly Pro
      130            135           140

```

```

Val Glu Glu Ala Asp Gly Gln Ser Arg Gly Leu Ser Ser Ala Gly Ser

```

145 150 155 160
 Leu Ser Ala Ser Phe Gln Leu Ser Val Glu Glu Ala Pro Ala Asp Asp
 165 170 175
 Ala Asp Pro Ser Leu Asp Pro Tyr Leu Val Ala Ser Pro Gln Ala Ser
 180 185 190
 Thr Gly Arg Gly His Pro Leu Gly Phe His Leu Ser Leu Glu Asp Leu
 195 200 205
 Tyr Cys Cys Met Pro Gln Leu Asp Ala Ala Gly Asp Arg Leu Glu Leu
 210 215 220
 Arg Ser Glu Gly Val Pro Cys Ile Ala Ser Gly Val Leu Val Ser Tyr
 225 230 235 240
 Pro Ser Val Gly Gly Ala Thr Arg Pro Ser Ala Ser Cys Gln Gln Gln
 245 250 255
 Arg Ala Gly His Ser Asp Val Arg Leu Ser Ala His His His Arg Met
 260 265 270
 Arg Arg Lys Ala Ala Val Lys Arg Leu Asp Pro Ala Arg Leu Pro Cys
 275 280 285
 His Trp Val Arg Pro Leu Ala Glu Val Leu Val Pro Asp Ser Gln Thr
 290 295 300
 Arg Pro Leu Glu Ala Tyr Arg Gly Arg Gln Arg Gly Glu Lys Thr Lys
 305 310 315 320
 Ala Arg Ala Glu Pro Gln Ala Leu Gly Pro Gly Thr Arg Val Ser Pro
 325 330 335
 Ala Ala Phe Phe Pro Leu Arg Pro Gly Ile Pro Phe Arg Asp Leu Asp
 340 345 350
 Ser Gly Pro Ala Leu Leu Phe Pro Thr Leu Asn Leu Gly Leu Ser Ser
 355 360 365
 Pro Ser Leu Glu Ser Lys Leu Pro Leu Pro Asn Ser Arg Ile Arg Phe
 370 375 380
 Leu Thr Thr His Pro Val Leu Pro Asp Val Ala Arg Ser Arg Ser Pro
 385 390 395 400
 Lys Leu Trp Pro Ser Val Arg Trp Pro Ser Gly Trp Glu Gly Lys Ala

405	410	415
Glu Leu Leu Gly Glu Leu Trp Ala Gly Arg Thr Arg Val Pro Pro Gln		
420	425	430
Gly Leu Glu Leu Ala Asp Arg Glu Gly Gln Asp Pro Gly Arg Trp Pro		
435	440	445
Arg Thr Thr Pro Pro Val Leu Glu Ala Thr Ser Gln Val Met Trp Lys		
450	455	460
Pro Val Leu Leu Pro Glu Ala Leu Lys Leu Ala Pro Gly Val Ser Met		
465	470	475
		480
Trp Asn Arg Ser Thr Gln Val Leu Leu Ser Ser Gly Val Pro Glu Gln		
485	490	495
Glu Asp Lys Glu Gly Ser Thr Phe Pro Pro Val Glu Gln His Pro Ile		
500	505	510
Gln Thr Gly Ala Pro Lys Pro Ser Ile Ser Pro Ala Gly Pro Gly Ser		
515	520	525
Phe Cys Tyr Val Ala Val Gly Cys Thr Gln His Pro Gly Leu Gly Arg		
530	535	540
Trp Leu Cys Leu Pro Tyr Ser Gly Leu Leu Gln Leu His Val Gln Leu		
545	550	555
		560
Trp Gln Lys Ser His Pro Trp Asp Leu Gln Cys Cys Ser Thr Asp Leu		
565	570	575
Thr Gly Lys Ile Ala Ile Val Thr Gly Ala Asn Ser Gly Ile Gly Lys		
580	585	590
Val Val Ser Gln Asp Leu Ala Arg Cys Gly Ala Gln Val Ile Leu Thr		
595	600	605
Cys Gln Ser Arg Glu Cys Gly Gln Gln Ala Leu Ala Glu Ile Gln Ala		
610	615	620
Ala Ser Asn Ser Asn Arg Leu Leu Leu Gly Glu Val Asp Leu Ser Ser		
625	630	635
		640
Met Thr Ser Ile Arg Ser Phe Ala Arg Arg Leu Leu Gln Glu Asn Pro		
645	650	655
Glu Ile His Leu Leu Val Asn Asn Ala Gly Val Ser Gly Phe Arg Arg		

660	665	670
His Leu Pro Gln Gly Ala Trp Ile Ser Pro Leu Ser Leu Thr Met Leu		
675	680	685
Gly Pro Phe Cys Ser Gln Ile Tyr Ser Lys Asp Leu Lys Gln Gly Val		
690	695	700
Leu Pro Val Leu Tyr Leu Ser Leu Ala Glu Glu Pro Gly Gly Ile Ser		
705	710	715
Gly Lys Tyr Phe Ser Ser Ser Cys Val Ile Thr Leu Pro Val Lys Ala		
725	730	735
Ser Arg Asp Pro His Val Ala Gln Ser Leu Trp Asn Ala Ser Val Arg		
740	745	750
Leu Thr Ser Leu Val Lys Met Asp		
755	760	

<210> 109
 <211> 2077
 <212> DNA
 <213> Homo sapiens

<400> 109
 atggagcggg ggcgcgaccg gctggcgctg gtgacggggg cctcgggggg catcggcgcg 60
 gccgtggccc gggccctggg ccagcaggga ctgaagggtg tgggctgcgc ccgcactgtg 120
 ggcaacatcg aggagctggc tgctgaatgt aagagtgcag gctaccccg gactttgatc 180
 ccctacagat gtgacctatc aaatgaagag gacatcctct ccatgttctc agctatccgt 240
 tctcagcaca gcggtgtaga catctgcata aacaatgctg gcttgggccc gcctgacacc 300
 ctgctctcag gcagcaccag tggttggaag gacatgttca atgtgaacgt gctggccctc 360
 agcatctgca cacgggaagc ctaccagtcc atgaaggagc ggaatgtgga cgatgggcac 420
 atcattaaca tcaatagcat gtctggccac cgagtgttac ccctgtctgt gacccacttc 480
 tatagtgcc acaagtatgc cgtcactgcg ctgacagagg gactgaggca agagcttcgg 540
 gaggcccaga cccacatccg agccacgtgg cagcttcgga gggaggaggc cgctgccgga 600
 tatcaggcag ccatcactgt gaagctgggg ttctgtggcc tccatcctct cccctcgacc 660
 tccccaagac ctggcaaagc tcagcccctg agaaggccct ctctgttggc ccagtgcata 720
 tctccagggtg tgggtggagac acaattcgcc ttcaaaactc acgacaagga ccctgagaag 780
 gcagctgcc aatgaagtgt ctcaaaccgc aggatgtggc cgaggctgtt 840
 atctacgtcc tcagaccccc cgacacatc cagattggag acatccagat gaggcccacg 900
 gagcagagag ctgcgcggag acggctgtcg agtacccttc acctcgggtg tgggagcctg 960
 ggagcgaact gcggcgcggg ttaccgtccc cggggacgca gcaaggggca tcgagtcctc 1020
 ggcgggagct gcgccatggc attgctctcg accgtccggg gcgcgacctg gggtcgcctc 1080
 gtcacccgtc atttctccca tgcagcgcgg catggggagc ggcttgggtg ggaggagcta 1140
 agccgcttgc tgctggatga cctgggtgcc acctctcggc tggagcttct gtttggcatg 1200
 accccgtgtc tcctggctct gcaggccgcc cgccgctctg tggcccggct cctgctccag 1260


```

gcgggtaaag ctgggctgca ggggaagcgg gccgagctgc tccg gatggc cgaggcgcgg 1320
gacattccag ttctgcggcc cagacggcag aaactggaca caatgtgccg ctaccaggtc 1380
caccagggtg tctgcatgga ggtgagcccc ctgcggcccc gcccttgag agaggccggg 1440
gaggcgagcc caggcgacga cccccagcag ttgtggctcg tcctcgatgg gatccaggat 1500
ccccggaatt ttggggctgt gctgcgttcc gcacacttcc tcggagtgga taagaccaaa 1560
gccagcagg gctggctcgt ggccggcacg gtgggctgcc caagcacaga ggatccccag 1620
tcctccgaga tccccatcat gagttgcttg gagttcctct gggaacggcc tactctcctt 1680
gtgctgggga atgagggctc aggtctatcc caggagggtgc aggcctcctg ccagcttctc 1740
ctcaccatcc tgccccggcg ccagctgcct cctggacttg agtccttgaa cgtctctgtg 1800
gctgcaggaa ttcttcttca ctccatttgc agccagagga agggtttccc cacagagggg 1860
gagagaaggc agcttctcca agacccccaa gaaccctcag ccaggtctga agggctcagc 1920
atggctcagc acccagggtc gtcttcaggc ccagagaaaag agaggcaaaa tgagggtga 1980
cgtggactgt ccacagtgtt catgtgctgg agtcagggac ggccgcacct gcctccgccg 2040
gctccagtgt gcggggagcc tctgcctgag tgtgcac 2077

```

<210> 110
 <211> 659
 <212> PRT
 <213> Homo sapiens

```

<400> 110
Met Glu Arg Trp Arg Asp Arg Leu Ala Leu Val Thr Gly Ala Ser Gly
  1             5             10             15

Gly Ile Gly Ala Ala Val Ala Arg Ala Leu Val Gln Gln Gly Leu Lys
          20             25             30

Val Val Gly Cys Ala Arg Thr Val Gly Asn Ile Glu Glu Leu Ala Ala
      35             40             45

Glu Cys Lys Ser Ala Gly Tyr Pro Gly Thr Leu Ile Pro Tyr Arg Cys
      50             55             60

Asp Leu Ser Asn Glu Glu Asp Ile Leu Ser Met Phe Ser Ala Ile Arg
      65             70             75             80

Ser Gln His Ser Gly Val Asp Ile Cys Ile Asn Asn Ala Gly Leu Ala
          85             90             95

Arg Pro Asp Thr Leu Leu Ser Gly Ser Thr Ser Gly Trp Lys Asp Met
          100            105            110

Phe Asn Val Asn Val Leu Ala Leu Ser Ile Cys Thr Arg Glu Ala Tyr
          115            120            125

Gln Ser Met Lys Glu Arg Asn Val Asp Asp Gly His Ile Ile Asn Ile
          130            135            140

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Asn Ser Met Ser Gly His Arg Val Leu Pro Leu Ser Val Thr His Phe
 145 150 155 160
 Tyr Ser Ala Thr Lys Tyr Ala Val Thr Ala Leu Thr Glu Gly Leu Arg
 165 170 175
 Gln Glu Leu Arg Glu Ala Gln Thr His Ile Arg Ala Thr Trp Gln Leu
 180 185 190
 Arg Arg Glu Glu Ala Ala Ala Gly Tyr Gln Ala Ala Ile Thr Val Lys
 195 200 205
 Leu Gly Phe Cys Gly Leu His Pro Leu Pro Ser Thr Ser Pro Arg Pro
 210 215 220
 Gly Lys Ala Gln Pro Leu Arg Arg Pro Ser Leu Leu Ala Gln Cys Ile
 225 230 235 240
 Ser Pro Gly Val Val Glu Thr Gln Phe Ala Phe Lys Leu His Asp Lys
 245 250 255
 Asp Pro Glu Lys Ala Ala Ala Thr Tyr Glu Gln Met Lys Cys Leu Lys
 260 265 270
 Pro Glu Asp Val Ala Glu Ala Val Ile Tyr Val Leu Ser Thr Pro Ala
 275 280 285
 His Ile Gln Ile Gly Asp Ile Gln Met Arg Pro Thr Glu Gln Arg Ala
 290 295 300
 Arg Arg Arg Arg Leu Ser Ser Thr Leu His Leu Gly Val Gly Ser Leu
 305 310 315 320
 Gly Ala Asn Cys Gly Ala Gly Tyr Arg Ser Arg Gly Arg Ser Lys Gly
 325 330 335
 His Arg Val Pro Gly Gly Ser Cys Ala Met Ala Leu Leu Ser Thr Val
 340 345 350
 Arg Gly Ala Thr Trp Gly Arg Leu Val Thr Arg His Phe Ser His Ala
 355 360 365
 Ala Arg His Gly Glu Arg Pro Gly Gly Glu Glu Leu Ser Arg Leu Leu
 370 375 380
 Leu Asp Asp Leu Val Pro Thr Ser Arg Leu Glu Leu Leu Phe Gly Met
 385 390 395 400

Thr Pro Cys Leu Leu Ala Leu Gln Ala Ala Arg Arg Ser Val Ala Arg
 405 410 415
 Leu Leu Leu Gln Ala Gly Lys Ala Gly Leu Gln Gly Lys Arg Ala Glu
 420 425 430
 Leu Leu Arg Met Ala Glu Ala Arg Asp Ile Pro Val Leu Arg Pro Arg
 435 440 445
 Arg Gln Lys Leu Asp Thr Met Cys Arg Tyr Gln Val His Gln Gly Val
 450 455 460
 Cys Met Glu Val Ser Pro Leu Arg Pro Arg Pro Trp Arg Glu Ala Gly
 465 470 475 480
 Glu Ala Ser Pro Gly Asp Asp Pro Gln Gln Leu Trp Leu Val Leu Asp
 485 490 495
 Gly Ile Gln Asp Pro Arg Asn Phe Gly Ala Val Leu Arg Ser Ala His
 500 505 510
 Phe Leu Gly Val Asp Lys Thr Lys Ala Gln Gln Gly Trp Leu Val Ala
 515 520 525
 Gly Thr Val Gly Cys Pro Ser Thr Glu Asp Pro Gln Ser Ser Glu Ile
 530 535 540
 Pro Ile Met Ser Cys Leu Glu Phe Leu Trp Glu Arg Pro Thr Leu Leu
 545 550 555 560
 Val Leu Gly Asn Glu Gly Ser Gly Leu Ser Gln Glu Val Gln Ala Ser
 565 570 575
 Cys Gln Leu Leu Leu Thr Ile Leu Pro Arg Arg Gln Leu Pro Pro Gly
 580 585 590
 Leu Glu Ser Leu Asn Val Ser Val Ala Ala Gly Ile Leu Leu His Ser
 595 600 605
 Ile Cys Ser Gln Arg Lys Gly Phe Pro Thr Glu Gly Glu Arg Arg Gln
 610 615 620
 Leu Leu Gln Asp Pro Gln Glu Pro Ser Ala Arg Ser Glu Gly Leu Ser
 625 630 635 640
 Met Ala Gln His Pro Gly Leu Ser Ser Gly Pro Glu Lys Glu Arg Gln
 645 650 655

Asn Glu Gly

<210> 111

<211> 3010

<212> DNA

<213> Homo sapiens

<400> 111

```
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tttatttaat tcatataaca tgagaaactc ctccagtagc gtcaactagg gttgataaga 120
ataatcgata aagcaaaata aaaacacctt ctccaagatt ttgtaactgc aagcgaacgc 180
atgggtggcg tgttgactaa gaaggcgaat taaaccacag gcattgtgca tgctcggtaga 240
cgcacggatc cagtgtggta aaccagcggg tgagagccca ggcagatttt tgagccagca 300
agtctgagcc tctggaaagg cttattcact aggcctgcta caaaggttgt ggggcaaaag 360
actgtttccc agctctgtct gaggttcagc ttggcgacat tccctggaag agcgtgacgg 420
aaagtgcaat ggaggcggga ggagagcgat ttcttagaca aaggcaagtc ttgcttctct 480
ttgtttttct gggaggggtc ctggctgggt ccgagtcagg acgctattct gtggctgagg 540
aaaaagagaa gggcttttta atagccaacc tagcaaagga tctgggacta agggtagagg 600
aactggccgc gagggggggc caagtgtgtg ccaaaggga caaacagcat ttcagctca 660
gtcatcagac aggtgatttg ctctgaatg agaaattgga ccgggaggag ctatgcggcc 720
ccacagaacc atgcatacta ctttttcaga tattactgca aaaccctttg caattcgtta 780
caaacgagct ccgtatcata gatgtaaag accattctcc ggtattcttt gaaaatgaaa 840
tgcatctgaa aatcctagaa agcactctgc caggaacagt aattcctttg ggaaatgctg 900
aggacttgga tgtgggaaga aacagcctcc aaaactacac tatcactccg aattcccact 960
tccacgtacc cactcgcagt cgtagggacg gaaggaagta cccggaacta gtactgaaca 1020
gagccctgga tcgcgaggag cagcctgaga tcaggttaac cctcacagcg ctagatggcg 1080
ggagtccacc caggtccggc acggccctgg tacggattga agttgtggac atcaatgaca 1140
acgtcccaga gtttgcaaag ctgctctatg aggtgcagat cccggaggac agccccgttg 1200
gatcccaggt tgccatcgtc tctgccaggg atttagacat tggaaactaat ggagaaatat 1260
cttatgcatt ttcccagca tctgaagaca ttcgcaaac gtttcgatta agtgcaaaat 1320
cgggagaact gcttttaaga cagaaactgg atttcgaatc catccagaca tacacagtaa 1380
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ttgatgtcaa cgacaaccca ccggaactga ccttgtcttc agtaaacagc cctattcctg 1500
agaactcggg agagactgta ctggctgttt tcagtgtttc tgatctagac tctggagaca 1560
acggaagagt gatgtgttcc attgagaaca atctcccctt ctctctgaaa ccatctgtag 1620
agaattttta caccctagtg tcagaaggcg cgctggacag agagaccaga tccgagtaca 1680
acattacat cactatcact gacctgggga caccaggct gaaaaccaag tacaacataa 1740
ccgtgctggt ctccgacgtc aatgacaacg ccccgccctt cacccaaata tcctacaccc 1800
tgttcgtccg cgagaacaac agccccgcc tgacatcgg cagtgtcagc gccacagaca 1860
gagactcagg caccaacgcc caggtaacct actcgctgct gccgccccag gaccgcacc 1920
tgcccccttc ttccctggtc tccatcaacg cggacaacgg ccacctgttt gccctcagg 1980
cgctggacta cgaggccctg caggcgttcg agttccgcgt gggcgccaca gaccgtggct 2040
ccccggcttt gagcagcgag gcgctggtgc gcgtgctggt gctggacgcc aacgacaact 2100
cgcccttcgt gctgtacccg ctgcagaacg gctccgcgcc ctgcaccgag ctggtgcccc 2160
ggcgggctga gccgggctac ctggtgacca aggtggtggc ggtggacggc gactcggggc 2220
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agaacgcctg gctgtcgtac cagctgctca aggccacgga gcccgggctg ttcggcgtgt 2280
gggcgcacaa tggcgaagtg cgcaccgcca ggctgctgag ggagcgcgac gctgccaagc 2340
agaggctggt ggtgctggtc aaggacaatg gcgagcctcc gcgctcggcc accgccacgc 2400
tgcacgtgct cctgggtggac ggcttctccc agccctacct gctgctcccg gaggcggcac 2460
cggcccaggc ccaggccgac ttgctcaccg tctacctggt ggtggcgttg gcctcggtgt 2520
cttcgctctt cctcttctcg gtgctcctgt tcgtggcggg gcggctgtgc aggaggagca 2580
gggcggcctc ggtgggtcgc tgctcgggtc ccgagggccc ctttccaggg cagatggtgg 2640
acgtgagcgg caccgggacc ctgtcccaga gctaccagta cgaggtgtgt ctgactggag 2700
gctccgggac aaatgagttc aagttcctga agccaattat cccaacttc gttgctcagg 2760
gtgcagagag ggtagcgag gcaaatccca gtttcaggaa gagctttgaa ttcacttaag 2820
tgtaataag gatctactga ggctagtctc gtttaatttg tgaaagtcc tttttactg 2880
ctttgcccat tggaggtgtc tccttttatt agaaagtaac catcttattc caattctatg 2940
catgttactg gtatttataa atgtatgagt ttttttgcgg tataataaat gtaaattttc 3000
tttgatttct                                     3010

```

<210> 112

<211> 796

<212> PRT

<213> Homo sapiens

<400> 112

```

Met Glu Ala Gly Gly Glu Arg Phe Leu Arg Gln Arg Gln Val Leu Leu
  1             5             10             15

Leu Phe Val Phe Leu Gly Gly Ser Leu Ala Gly Ser Glu Ser Arg Arg
          20             25             30

Tyr Ser Val Ala Glu Glu Lys Glu Lys Gly Phe Leu Ile Ala Asn Leu
          35             40             45

Ala Lys Asp Leu Gly Leu Arg Val Glu Glu Leu Ala Ala Arg Gly Ala
          50             55             60

Gln Val Val Ser Lys Gly Asn Lys Gln His Phe Gln Leu Ser His Gln
          65             70             75             80

Thr Gly Asp Leu Leu Leu Asn Glu Lys Leu Asp Arg Glu Glu Leu Cys
          85             90             95

Gly Pro Thr Glu Pro Cys Ile Leu His Phe Gln Ile Leu Leu Gln Asn
          100            105            110

Pro Leu Gln Phe Val Thr Asn Glu Leu Arg Ile Ile Asp Val Asn Asp
          115            120            125

His Ser Pro Val Phe Phe Glu Asn Glu Met His Leu Lys Ile Leu Glu
          130            135            140

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Ser Thr Leu Pro Gly Thr Val Ile Pro Leu Gly Asn Ala Glu Asp Leu
 145 150 155 160

Asp Val Gly Arg Asn Ser Leu Gln Asn Tyr Thr Ile Thr Pro Asn Ser
 165 170 175

His Phe His Val Pro Thr Arg Ser Arg Arg Asp Gly Arg Lys Tyr Pro
 180 185 190

Glu Leu Val Leu Asn Arg Ala Leu Asp Arg Glu Glu Gln Pro Glu Ile
 195 200 205

Arg Leu Thr Leu Thr Ala Leu Asp Gly Gly Ser Pro Pro Arg Ser Gly
 210 215 220

Thr Ala Leu Val Arg Ile Glu Val Val Asp Ile Asn Asp Asn Val Pro
 225 230 235 240

Glu Phe Ala Lys Leu Leu Tyr Glu Val Gln Ile Pro Glu Asp Ser Pro
 245 250 255

Val Gly Ser Gln Val Ala Ile Val Ser Ala Arg Asp Leu Asp Ile Gly
 260 265 270

Thr Asn Gly Glu Ile Ser Tyr Ala Phe Ser Gln Ala Ser Glu Asp Ile
 275 280 285

Arg Lys Thr Phe Arg Leu Ser Ala Lys Ser Gly Glu Leu Leu Leu Arg
 290 295 300

Gln Lys Leu Asp Phe Glu Ser Ile Gln Thr Tyr Thr Val Asn Ile Gln
 305 310 315 320

Ala Thr Asp Gly Gly Gly Leu Ser Gly Lys Ser Thr Val Ile Val Gln
 325 330 335

Val Val Asp Val Asn Asp Asn Pro Pro Glu Leu Thr Leu Ser Ser Val
 340 345 350

Asn Ser Pro Ile Pro Glu Asn Ser Gly Glu Thr Val Leu Ala Val Phe
 355 360 365

Ser Val Ser Asp Leu Asp Ser Gly Asp Asn Gly Arg Val Met Cys Ser
 370 375 380

Ile Glu Asn Asn Leu Pro Phe Phe Leu Lys Pro Ser Val Glu Asn Phe
 385 390 395 400

Tyr Thr Leu Val Ser Glu Gly Ala Leu Asp Arg Glu Thr Arg Ser Glu
 405 410 415
 Tyr Asn Ile Thr Ile Thr Ile Thr Asp Leu Gly Thr Pro Arg Leu Lys
 420 425 430
 Thr Lys Tyr Asn Ile Thr Val Leu Val Ser Asp Val Asn Asp Asn Ala
 435 440 445
 Pro Ala Phe Thr Gln Ile Ser Tyr Thr Leu Phe Val Arg Glu Asn Asn
 450 455 460
 Ser Pro Ala Leu His Ile Gly Ser Val Ser Ala Thr Asp Arg Asp Ser
 465 470 475 480
 Gly Thr Asn Ala Gln Val Thr Tyr Ser Leu Leu Pro Pro Gln Asp Pro
 485 490 495
 His Leu Pro Leu Ser Ser Leu Val Ser Ile Asn Ala Asp Asn Gly His
 500 505 510
 Leu Phe Ala Leu Arg Ser Leu Asp Tyr Glu Ala Leu Gln Ala Phe Glu
 515 520 525
 Phe Arg Val Gly Ala Thr Asp Arg Gly Ser Pro Ala Leu Ser Ser Glu
 530 535 540
 Ala Leu Val Arg Val Leu Val Leu Asp Ala Asn Asp Asn Ser Pro Phe
 545 550 555 560
 Val Leu Tyr Pro Leu Gln Asn Gly Ser Ala Pro Cys Thr Glu Leu Val
 565 570 575
 Pro Arg Ala Ala Glu Pro Gly Tyr Leu Val Thr Lys Val Val Ala Val
 580 585 590
 Asp Gly Asp Ser Gly Gln Asn Ala Trp Leu Ser Tyr Gln Leu Leu Lys
 595 600 605
 Ala Thr Glu Pro Gly Leu Phe Gly Val Trp Ala His Asn Gly Glu Val
 610 615 620
 Arg Thr Ala Arg Leu Leu Arg Glu Arg Asp Ala Ala Lys Gln Arg Leu
 625 630 635 640
 Val Val Leu Val Lys Asp Asn Gly Glu Pro Pro Arg Ser Ala Thr Ala
 645 650 655

Thr Leu His Val Leu Leu Val Asp Gly Phe Ser Gln Pro Tyr Leu Leu
 660 665 670
 Leu Pro Glu Ala Ala Pro Ala Gln Ala Gln Ala Asp Leu Leu Thr Val
 675 680 685
 Tyr Leu Val Val Ala Leu Ala Ser Val Ser Ser Leu Phe Leu Phe Ser
 690 695 700
 Val Leu Leu Phe Val Ala Val Arg Leu Cys Arg Arg Ser Arg Ala Ala
 705 710 715 720
 Ser Val Gly Arg Cys Ser Val Pro Glu Gly Pro Phe Pro Gly Gln Met
 725 730 735
 Val Asp Val Ser Gly Thr Gly Thr Leu Ser Gln Ser Tyr Gln Tyr Glu
 740 745 750
 Val Cys Leu Thr Gly Gly Ser Gly Thr Asn Glu Phe Lys Phe Leu Lys
 755 760 765
 Pro Ile Ile Pro Asn Phe Val Ala Gln Gly Ala Glu Arg Val Ser Glu
 770 775 780
 Ala Asn Pro Ser Phe Arg Lys Ser Phe Glu Phe Thr
 785 790 795

<210> 113
 <211> 261
 <212> PRT
 <213> Homo sapiens

<400> 113
 Met Ile Tyr Lys Cys Pro Met Cys Arg Glu Phe Phe Ser Glu Arg Ala
 1 5 10 15
 Asp Leu Phe Met His Gln Lys Val His Thr Ala Glu Lys Pro His Lys
 20 25 30
 Cys Asp Lys Cys Asp Lys Gly Phe Phe His Ile Ser Glu Leu His Ile
 35 40 45
 His Trp Arg Asp His Thr Gly Glu Lys Val Tyr Lys Cys Asp Asp Cys
 50 55 60
 Gly Lys Asp Phe Ser Thr Thr Thr Lys Leu Asn Arg His Lys Lys Ile

65		70		75		80
His Thr Val Glu Lys Pro Tyr Lys Cys Tyr Glu Cys Gly Lys Ala Phe						
	85			90		95
Asn Trp Ser Pro His Leu Gln Ile His Met Arg Val His Thr Gly Glu						
	100		105		110	
Lys Pro Tyr Val Cys Ser Glu Cys Gly Arg Gly Phe Ser Asn Ser Ser						
	115		120		125	
Asn Leu Cys Met His Gln Arg Val His Thr Gly Glu Lys Pro Phe Lys						
	130		135		140	
Cys Glu Glu Cys Gly Lys Ala Phe Arg His Thr Ser Ser Leu Cys Met						
	145		150		155	160
His Gln Arg Val His Thr Gly Glu Lys Pro Tyr Lys Cys Tyr Glu Cys						
	165		170		175	
Gly Lys Ala Phe Ser Gln Ser Ser Ser Leu Cys Ile His Gln Arg Val						
	180		185		190	
His Thr Gly Glu Lys Pro Tyr Arg Cys Cys Gly Cys Gly Lys Ala Phe						
	195		200		205	
Ser Gln Ser Ser Ser Leu Cys Ile His Gln Arg Val His Thr Gly Glu						
	210		215		220	
Lys Pro Phe Lys Cys Asp Glu Cys Gly Lys Ala Phe Ser Gln Ser Thr						
	225		230		235	240
Ser Leu Cys Ile His Gln Arg Val His Thr Lys Glu Arg Asn His Leu						
	245		250		255	
Lys Ile Ser Val Ile						
	260					

<210> 114

<211> 184

<212> PRT

<213> Homo sapiens

<400> 114

Val	His	Thr	Ala	Glu	Lys	Pro	His	Lys	Cys	Asp	Lys	Cys	Asp	Lys	Gly
1					5					10					15

Phe Phe His Ile Ser Glu Leu His Ile His Trp Arg Asp His Thr Gly
 20 25 30
 Glu Lys Val Tyr Lys Cys Asp Asp Cys Gly Lys Asp Phe Ser Thr Thr
 35 40 45
 Thr Lys Leu Asn Arg His Lys Lys Ile His Thr Val Glu Lys Pro Tyr
 50 55 60
 Lys Cys Tyr Glu Cys Gly Lys Ala Phe Asn Trp Ser Ser His Leu Gln
 65 70 75 80
 Ile His Met Arg Val His Thr Gly Glu Glu Pro Tyr Val Cys Ser Glu
 85 90 95
 Cys Gly Arg Gly Phe Ser Asn Ser Ser Asn Leu Cys Met His Gln Arg
 100 105 110
 Val His Thr Gly Glu Lys Pro Phe Lys Cys Glu Glu Cys Gly Lys Ala
 115 120 125
 Phe Arg His Thr Ser Ser Leu Cys Met His Gln Arg Val His Thr Gly
 130 135 140
 Glu Lys Pro Tyr Lys Cys Tyr Glu Cys Gly Lys Ala Phe Ser Gln Arg
 145 150 155 160
 Ser Ser Leu Cys Ile His Gln Arg Val His Thr Gly Glu Lys Pro Tyr
 165 170 175
 Arg Cys Cys Gly Cys Gly Lys Ala
 180

<210> 115
 <211> 183
 <212> PRT
 <213> Homo sapiens

<400> 115
 Val His Thr Ala Glu Lys Pro His Lys Cys Asp Lys Cys Asp Lys Gly
 1 5 10 15
 Phe Phe His Ile Ser Glu Leu His Ile His Trp Arg Asp His Thr Gly
 20 25 30
 Glu Lys Val Tyr Lys Cys Asp Asp Cys Gly Lys Asp Phe Ser Thr Thr
 35 40 45

Thr Lys Leu Asn Arg His Lys Lys Ile His Thr Val Glu Lys Pro Tyr
 50 55 60
 Lys Cys Tyr Glu Cys Gly Lys Ala Phe Asn Trp Ser Ser His Leu Gln
 65 70 75 80
 Ile His Met Arg Val His Thr Gly Glu Glu Pro Tyr Val Cys Ser Glu
 85 90 95
 Cys Gly Arg Gly Phe Ser Asn Ser Ser Asn Leu Cys Met His Gln Arg
 100 105 110
 Val His Thr Gly Glu Lys Pro Phe Lys Cys Glu Glu Cys Gly Lys Ala
 115 120 125
 Phe Arg His Thr Ser Ser Leu Cys Met His Gln Arg Val His Thr Gly
 130 135 140
 Glu Lys Pro Tyr Lys Cys Tyr Glu Cys Gly Lys Ala Phe Ser Gln Arg
 145 150 155 160
 Ser Ser Leu Cys Ile His Gln Arg Val His Thr Gly Glu Lys Pro Tyr
 165 170 175
 Arg Cys Cys Gly Cys Gly Lys
 180

<210> 116
 <211> 1147
 <212> PRT
 <213> Homo sapiens

<400> 116
 Met Pro Val Lys Lys Gly Cys Gln Gly Pro Pro Lys Gly Met Leu Arg
 1 5 10 15
 Pro Cys Val Pro Gly Phe Ser Val Cys Ala Ser Gln Ser Leu Ile Ser
 20 25 30
 Pro Ala Glu Val Pro Gly Leu Arg Trp Ala Cys Leu Gln Glu Gln Leu
 35 40 45
 Val Leu Gly Ser Gly Asn Ser Val Glu Leu Ser Cys His Pro Pro Gly
 50 55 60
 Arg Gly Pro Met Glu Leu Thr Val Gly Val Lys Gly Ser Ala Gly Leu

65		70		75		80
Pro Gly Thr Ser Ser Trp Gly Ser Thr Ile Val Ala Pro Pro Gly Ser						
	85			90		95
Gly Ile Pro Pro Leu Pro Pro Arg Arg Arg His Ser Thr Arg Ser Leu						
	100		105			110
Ala Cys Cys Asn Ser Ile His Ser Ser Gly Ala Ala Ser Thr Val Gln						
	115		120			125
Ala Gly Gly Arg Gly Gly Gln Gly Gln Arg Ala Ala Phe Pro Gly Gly						
	130		135			140
Arg Thr Leu Pro Ser Pro Val Thr Arg Lys Thr Val Thr Val His Pro						
	145		150		155	160
Glu Ser His Cys Gln Gln Leu His Val Asn Ser Ser Pro Lys Asp Thr						
	165		170			175
Arg Glu Thr Gln Ala Ser Gly Pro Met Gly Thr Leu Gly Val Arg Ala						
	180		185			190
Leu Ala Arg Gln Thr Gly Ala Val Tyr Lys Ser Arg Gly Pro Pro Gln						
	195		200			205
Gln Val Asp Arg Lys Glu Gln Ile Lys Gly Lys Pro Tyr Glu Thr His						
	210		215			220
Leu Gln Arg Asn Gln Pro Ile Gln Glu Lys Thr Arg Phe Arg Ala Pro						
	225		230		235	240
Leu Ala His Pro Arg Gly Arg Pro Cys Arg Pro Val Leu Ala Gln Leu						
	245		250			255
Lys His Pro Pro Pro Tyr Pro Ser Leu Leu Lys Gly Ala Leu Cys Thr						
	260		265			270
Gly Ala Glu Arg Phe Leu Ser Lys Ala Leu Trp Leu Ser Leu Ser Ser						
	275		280			285
Pro Ser Thr Leu His Pro Thr Leu Ser Cys Ser Lys Gly Pro Cys Leu						
	290		295		300	
Pro Glu Gln Asn Thr Pro Ser Pro Arg Leu Tyr Gly Ser Arg Ala Gln						
	305		310		315	320
Leu Arg Pro Lys Val Val Lys Gly Pro Phe Arg Ser Pro Lys Cys Ala						

580	585	590
Glu Gln Val His Phe Thr Leu Phe Ser Trp Ser Gln Ile Lys Asn Ser		
595	600	605
Ala His Gly Thr Phe Cys Lys Tyr Gly Leu Leu Ala Phe Ser Asp Val		
610	615	620
Val Ile Glu Phe Ser Pro Glu Glu Trp Ala Cys Leu Asp Pro Ala Gln		
625	630	635
Arg Asn Leu Tyr Arg Asp Val Met Phe Glu Asn Tyr Arg Asn Leu Val		
	645	650
		655
Ser Leu Asp Leu Leu Pro Glu Gln Asp Met Lys Asp Leu Cys Gln Lys		
	660	665
		670
Val Thr Leu Thr Arg His Arg Ser Trp Gly Leu Asp Asn Leu His Leu		
	675	680
		685
Val Lys Asp Trp Arg Thr Val Asn Glu Gly Lys Gly Gln Lys Glu Tyr		
	690	695
		700
Cys Asn Arg Leu Thr Gln Cys Ser Ser Thr Lys Ser Lys Ile Phe Gln		
705	710	715
		720
Cys Ile Glu Cys Gly Arg Asn Phe Ser Trp Arg Ser Ile Leu Thr Glu		
	725	730
		735
His Lys Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys		
	740	745
		750
Gly Lys Val Phe Asn Arg Cys Ser Asn Leu Thr Lys His Lys Arg Ile		
	755	760
		765
His Thr Gly Glu Lys Pro Tyr Lys Cys Asp Glu Cys Gly Lys Val Phe		
	770	775
		780
Asn Trp Trp Ser Gln Leu Thr Asn His Lys Lys Ile His Thr Gly Glu		
785	790	795
		800
Lys Pro Tyr Lys Cys Asp Glu Cys Asp Lys Val Phe Asn Trp Trp Ser		
	805	810
		815
Gln Leu Thr Ser His Lys Lys Ile His Ser Gly Glu Lys Pro Tyr Pro		
	820	825
		830
Cys Glu Glu Cys Gly Lys Ala Phe Thr Gln Phe Ser Asn Leu Thr Gln		

835	840	845
His Lys Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Lys Glu Cys		
850	855	860
Cys Lys Ala Phe Asn Lys Phe Ser Asn Leu Thr Gln His Lys Arg Ile		
865	870	875 880
His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys Gly Asn Val Phe		
	885	890 895
Asn Glu Cys Ser His Leu Thr Arg His Arg Arg Ile His Thr Gly Glu		
	900	905 910
Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys Ala Phe Thr Gln Phe Ala		
	915	920 925
Ser Leu Thr Arg His Lys Arg Ile His Thr Gly Glu Lys Pro Tyr Gln		
	930	935 940
Cys Glu Glu Cys Gly Lys Thr Phe Asn Arg Cys Ser His Leu Ser Ser		
945	950	955 960
His Lys Arg Ile His Thr Gly Glu Lys Pro Tyr Lys Cys Glu Glu Cys		
	965	970 975
Gly Arg Thr Phe Thr Gln Phe Ser Asn Leu Thr Gln His Lys Arg Ile		
	980	985 990
His Thr Gly Glu Lys Pro Tyr Lys Cys Lys Glu Cys Gly Lys Ala Phe		
	995	1000 1005
Asn Lys Phe Ser Ser Leu Thr Gln His Arg Arg Ile His Thr Gly Val		
1010	1015	1020
Lys Pro Tyr Lys Cys Glu Glu Cys Gly Lys Val Phe Lys Gln Cys Ser		
1025	1030	1035 1040
His Leu Thr Ser His Lys Arg Ile His Thr Gly Glu Lys Pro Tyr Lys		
	1045	1050 1055
Cys Lys Glu Cys Gly Lys Ala Phe Tyr Gln Ser Ser Ile Leu Ser Lys		
	1060	1065 1070
His Lys Arg Ile His Thr Glu Glu Lys Pro Tyr Lys Cys Glu Glu Cys		
	1075	1080 1085
Gly Lys Ala Phe Asn Gln Phe Ser Ser Leu Thr Arg His Lys Arg Ile		

1090 1095 1100
 His Thr Gly Glu Lys Arg Tyr Lys Cys Lys Glu Cys Gly Lys Gly Phe
 1105 1110 1115 1120
 Tyr Gln Ser Ser Ile His Ser Lys Tyr Lys Arg Ile Tyr Thr Gly Glu
 1125 1130 1135
 Glu Pro Asp Lys Cys Lys Lys Cys Gly Ser Leu
 1140 1145

 <210> 117
 <211> 606
 <212> PRT
 <213> Homo sapiens

 <400> 117
 Met Ala Val Thr Phe Glu Asp Val Thr Ile Ile Phe Thr Trp Glu Glu
 1 5 10 15
 Trp Lys Phe Leu Asp Ser Ser Gln Lys Arg Leu Tyr Arg Glu Val Met
 20 25 30
 Trp Glu Asn Tyr Thr Asn Val Met Ser Val Glu Asn Trp Asn Glu Ser
 35 40 45
 Tyr Lys Ser Gln Glu Glu Lys Phe Arg Tyr Leu Glu Tyr Glu Asn Phe
 50 55 60
 Ser Tyr Trp Gln Gly Trp Trp Asn Ala Gly Ala Gln Met Tyr Glu Asn
 65 70 75 80
 Gln Asn Tyr Gly Glu Thr Val Gln Gly Thr Asp Ser Lys Asp Leu Thr
 85 90 95
 Gln Gln Asp Arg Ser Gln Cys Gln Glu Trp Leu Ile Leu Ser Thr Gln
 100 105 110
 Val Pro Gly Tyr Gly Asn Tyr Glu Leu Thr Phe Glu Ser Lys Ser Leu
 115 120 125
 Arg Asn Leu Lys Tyr Lys Asn Phe Met Pro Trp Gln Ser Leu Glu Thr
 130 135 140
 Lys Thr Thr Gln Asp Tyr Gly Arg Glu Ile Tyr Met Ser Gly Ser His
 145 150 155 160

Gly Phe Gln Gly Gly Arg Tyr Arg Leu Gly Ile Ser Arg Lys Asn Leu
 165 170 175
 Ser Met Glu Lys Glu Gln Lys Leu Ile Val Gln His Ser Tyr Ile Pro
 180 185 190
 Val Glu Glu Ala Leu Pro Gln Tyr Val Gly Val Ile Cys Gln Glu Asp
 195 200 205
 Leu Leu Arg Asp Ser Met Glu Glu Lys Tyr Cys Gly Cys Asn Lys Cys
 210 215 220
 Lys Gly Ile Tyr Tyr Trp Asn Ser Arg Cys Val Phe His Lys Arg Asn
 225 230 235 240
 Gln Pro Gly Glu Asn Leu Cys Gln Cys Ser Ile Arg Lys Ala Cys Phe
 245 250 255
 Ser Gln Arg Ser Asp Leu Tyr Arg His Pro Arg Asn His Ile Gly Lys
 260 265 270
 Lys Leu Tyr Gly Cys Asp Glu Val Asp Gly Asn Phe His Gln Ser Ser
 275 280 285
 Gly Val His Phe His Gln Arg Val His Ile Gly Glu Val Pro Tyr Ser
 290 295 300
 Cys Asn Ala Cys Gly Lys Ser Phe Ser Gln Ile Ser Ser Leu His Asn
 305 310 315 320
 His Gln Arg Val His Thr Glu Glu Lys Phe Tyr Lys Ile Glu Cys Asp
 325 330 335
 Lys Asp Leu Ser Arg Asn Ser Leu Leu His Ile His Gln Arg Leu His
 340 345 350
 Ile Gly Glu Lys Pro Phe Lys Cys Asn Gln Cys Gly Lys Ser Phe Asn
 355 360 365
 Arg Ser Ser Val Leu His Val His Gln Arg Val His Thr Gly Glu Lys
 370 375 380
 Pro Tyr Lys Cys Asp Glu Cys Gly Lys Gly Phe Ser Gln Ser Ser Asn
 385 390 395 400
 Leu Arg Ile His Gln Leu Val His Thr Gly Glu Lys Ser Tyr Lys Cys
 405 410 415

Glu Asp Cys Gly Lys Gly Phe Thr Gln Arg Ser Asn Leu Gln Ile His
 420 425 430
 Gln Arg Val His Thr Gly Glu Lys Pro Tyr Lys Cys Asp Asp Cys Gly
 435 440 445
 Lys Asp Phe Ser His Ser Ser Asp Leu Arg Ile His Gln Arg Val His
 450 455 460
 Thr Gly Glu Lys Pro Tyr Thr Cys Pro Glu Cys Gly Lys Gly Phe Ser
 465 470 475 480
 Lys Ser Ser Lys Leu His Thr His Gln Arg Val His Thr Gly Glu Lys
 485 490 495
 Pro Tyr Lys Cys Glu Glu Cys Gly Lys Gly Phe Ser Gln Arg Ser His
 500 505 510
 Leu Leu Ile His Gln Arg Val His Thr Gly Glu Lys Pro Tyr Lys Cys
 515 520 525
 His Asp Cys Gly Lys Gly Phe Ser His Ser Ser Asn Leu His Ile His
 530 535 540
 Gln Arg Val His Thr Gly Glu Lys Pro Tyr Gln Cys Ala Lys Cys Gly
 545 550 555 560
 Lys Gly Phe Ser His Ser Ser Ala Leu Arg Ile His Gln Arg Val His
 565 570 575
 Ala Gly Glu Lys Pro Tyr Lys Cys Arg Glu Tyr Tyr Lys Gly Phe Asp
 580 585 590
 His Asn Ser His Leu His Asn Asn His Arg Arg Gly Asn Leu
 595 600 605

<210> 118

<211> 24

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: zinc finger
 C2H2 consensus pattern sequence

<400> 118

Tyr Lys Cys Pro Phe Asp Cys Gly Lys Ser Phe Ser Arg Lys Ser Asn

1	5	10	15
---	---	----	----

Leu Lys Arg His Leu Arg Thr His
20

<210> 119
<211> 23
<212> PRT
<213> Homo sapiens

<400> 119
Tyr Lys Cys Pro Met Cys Arg Glu Phe Phe Ser Glu Arg Ala Asp Leu
1 5 10 15

Phe Met His Gln Lys Ile His
20

<210> 120
<211> 23
<212> PRT
<213> Homo sapiens

<400> 120
His Lys Cys Asp Lys Cys Asp Lys Gly Phe Phe His Ile Ser Glu Leu
1 5 10 15

His Ile His Trp Arg Asp His
20

<210> 121
<211> 23
<212> PRT
<213> Homo sapiens

<400> 121
Tyr Lys Cys Asp Asp Cys Gly Lys Asp Phe Ser Thr Thr Thr Lys Leu
1 5 10 15

Asn Arg His Lys Lys Ile His
20

<210> 122
<211> 23
<212> PRT

<213> Homo sapiens

<400> 122

Tyr Lys Cys Tyr Glu Cys Gly Lys Ala Phe Asn Trp Ser Ser His Leu
1 5 10 15

Gln Ile His Met Arg Val His
20

<210> 123

<211> 23

<212> PRT

<213> Homo sapiens

<400> 123

Tyr Val Cys Ser Glu Cys Gly Arg Gly Phe Ser Asn Ser Ser Asn Leu
1 5 10 15

Cys Met His Gln Arg Val His
20

<210> 124

<211> 23

<212> PRT

<213> Homo sapiens

<400> 124

Phe Lys Cys Glu Glu Cys Gly Lys Ala Phe Arg His Thr Ser Ser Leu
1 5 10 15

Cys Met His Gln Arg Val His
20

<210> 125

<211> 23

<212> PRT

<213> Homo sapiens

<400> 125

Tyr Lys Cys Tyr Glu Cys Gly Lys Ala Phe Ser Gln Ser Ser Ser Leu
1 5 10 15

Cys Ile His Gln Arg Val His
20

<210> 126
<211> 23
<212> PRT
<213> Homo sapiens

<400> 126
Tyr Arg Cys Cys Gly Cys Gly Lys Ala Phe Ser Gln Ser Ser Gly Leu
1 5 10 15
Cys Ile His Gln Arg Val His
20

<210> 127
<211> 23
<212> PRT
<213> Homo sapiens

<400> 127
Phe Lys Cys Asp Glu Cys Gly Lys Ala Phe Ser Gln Ser Thr Ser Leu
1 5 10 15
Cys Ile His Gln Arg Val His
20

<210> 128
<211> 388
<212> PRT
<213> Homo sapiens

<400> 128
Met Lys Trp Leu Leu Leu Leu Gly Leu Val Ala Leu Ser Glu Cys Ile
1 5 10 15
Met Tyr Lys Val Pro Leu Ile Arg Lys Lys Ser Leu Arg Arg Thr Leu
20 25 30
Ser Glu Arg Gly Leu Leu Lys Asp Phe Leu Lys Lys His Asn Leu Asn
35 40 45
Pro Ala Arg Lys Tyr Phe Pro Gln Trp Glu Ala Pro Thr Leu Val Asp
50 55 60
Glu Gln Pro Leu Glu Asn Tyr Leu Asp Met Glu Tyr Phe Gly Thr Ile
65 70 75 80

Ile Leu Gln Ser Glu Gly Ser Cys Ile Ser Gly Phe Gln Gly Met Asn
340 345 350

Leu Pro Thr Glu Ser Gly Glu Leu Trp Ile Leu Gly Asp Val Phe Ile
355 360 365

Arg Gln Tyr Phe Thr Val Phe Asp Arg Ala Asn Asn Gln Val Gly Leu
370 375 380

Ala Pro Val Ala
385

<210> 129

<211> 388

<212> PRT

<213> Homo sapiens

<400> 129

Met Lys Trp Leu Leu Leu Gly Leu Val Ala Leu Ser Glu Cys Ile
1 5 10 15

Met Tyr Lys Val Pro Leu Ile Arg Lys Lys Ser Leu Arg Arg Thr Leu
20 25 30

Ser Glu Arg Gly Leu Leu Lys Asp Phe Leu Lys Lys His Asn Leu Asn
35 40 45

Pro Ala Arg Lys Tyr Phe Pro Gln Trp Lys Ala Pro Thr Leu Val Asp
50 55 60

Glu Gln Pro Leu Glu Asn Tyr Leu Asp Met Glu Tyr Phe Gly Thr Ile
65 70 75 80

Gly Ile Gly Thr Pro Ala Gln Asp Phe Thr Val Leu Phe Asp Thr Gly
85 90 95

Ser Ser Asn Leu Trp Val Pro Ser Val Tyr Cys Ser Ser Leu Ala Cys
100 105 110

Thr Asn His Asn Arg Phe Asn Pro Glu Asp Ser Ser Thr Tyr Gln Ser
115 120 125

Thr Ser Glu Thr Val Ser Ile Thr Tyr Gly Thr Gly Ser Met Thr Gly
130 135 140

Ile Leu Gly Tyr Asp Thr Val Gln Val Gly Gly Ile Ser Asp Thr Asn
145 150 155 160

Gln Ile Phe Gly Leu Ser Glu Thr Glu Pro Gly Ser Phe Leu Tyr Tyr
 165 170 175
 Ala Pro Phe Asp Gly Ile Leu Gly Leu Ala Tyr Pro Ser Ile Ser Ser
 180 185 190
 Ser Gly Ala Thr Pro Val Phe Asp Asn Ile Trp Asn Gln Gly Leu Val
 195 200 205
 Ser Gln Asp Leu Phe Ser Val Tyr Leu Ser Ala Asp Asp Gln Ser Gly
 210 215 220
 Ser Val Val Ile Phe Gly Gly Ile Asp Ser Ser Tyr Tyr Thr Gly Ser
 225 230 235 240
 Leu Asn Trp Val Pro Val Thr Val Glu Gly Tyr Trp Gln Ile Thr Val
 245 250 255
 Asp Ser Ile Thr Met Asn Gly Glu Ala Ile Ala Cys Ala Glu Gly Cys
 260 265 270
 Gln Ala Ile Val Asp Thr Gly Thr Ser Leu Leu Thr Gly Pro Thr Ser
 275 280 285
 Pro Ile Ala Asn Ile Gln Ser Asp Ile Gly Ala Ser Glu Asn Ser Asp
 290 295 300
 Gly Asp Met Val Val Ser Cys Ser Ala Ile Ser Ser Leu Pro Asp Ile
 305 310 315 320
 Val Phe Thr Ile Asn Gly Val Gln Tyr Pro Val Pro Pro Ser Ala Tyr
 325 330 335
 Ile Leu Gln Ser Glu Gly Ser Cys Ile Ser Gly Phe Gln Gly Met Asn
 340 345 350
 Leu Pro Thr Glu Ser Gly Glu Leu Trp Ile Leu Gly Asp Val Phe Ile
 355 360 365
 Arg Gln Tyr Phe Thr Val Phe Glu Arg Ala Asn Asn Gln Val Gly Leu
 370 375 380
 Ala Pro Val Ala
 385

<210> 130

<211> 388

<212> PRT

<213> Homo sapiens

<400> 130

Met Lys Trp Leu Leu Leu Leu Gly Leu Val Ala Leu Ser Glu Cys Ile
1 5 10 15

Met Tyr Lys Val Pro Leu Ile Arg Lys Lys Ser Phe Arg Arg Thr Leu
20 25 30

Ser Glu Arg Gly Leu Leu Lys Asp Phe Leu Lys Lys His Asn Leu Asn
35 40 45

Pro Ala Arg Lys Tyr Phe Pro Gln Trp Lys Ala Pro Thr Leu Val Asp
50 55 60

Glu Gln Pro Leu Glu Asn Tyr Leu Asp Met Glu Tyr Phe Gly Thr Ile
65 70 75 80

Gly Ile Gly Thr Pro Ala Gln Asp Phe Thr Val Leu Phe Asp Thr Gly
85 90 95

Ser Ser Asn Leu Trp Val Pro Ser Val Tyr Cys Ser Ser Leu Ala Cys
100 105 110

Thr Asn His Asn Arg Phe Asn Pro Glu Asp Ser Ser Thr Tyr Gln Ser
115 120 125

Thr Ser Glu Thr Val Ser Ile Thr Tyr Gly Thr Gly Ser Met Thr Gly
130 135 140

Ile Leu Gly Tyr Asp Thr Val Gln Val Gly Gly Ile Ser Asp Thr Asn
145 150 155 160

Gln Ile Phe Gly Leu Ser Glu Thr Glu Pro Gly Ser Phe Leu Tyr Tyr
165 170 175

Ala Pro Phe Asp Gly Ile Leu Gly Leu Ala Tyr Pro Ser Ile Ser Ser
180 185 190

Ser Gly Ala Thr Pro Val Phe Asp Asn Ile Trp Asn Gln Gly Leu Val
195 200 205

Ser Gln Asp Leu Phe Ser Val Tyr Leu Ser Ala Asp Asp Gln Ser Gly
210 215 220

Ser Val Val Ile Phe Gly Gly Ile Asp Ser Ser Tyr Tyr Thr Gly Ser

Pro Ala Arg Lys Tyr Phe Pro Gln Trp Glu Ala Pro Thr Leu Val Asp
 50 55 60
 Glu Gln Pro Leu Glu Asn Tyr Leu Asp Met Glu Tyr Phe Gly Thr Ile
 65 70 75 80
 Gly Ile Gly Thr Pro Ala Gln Asp Phe Thr Val Leu Phe Asp Thr Gly
 85 90 95
 Ser Ser Asn Leu Trp Val Pro Ser Val Tyr Cys Ser Ser Leu Ala Cys
 100 105 110
 Thr Asn His Asn Arg Phe Asn Pro Glu Asp Ser Ser Thr Tyr Gln Ser
 115 120 125
 Thr Ser Glu Thr Val Ser Ile Thr Tyr Gly Thr Gly Ser Met Thr Gly
 130 135 140
 Ile Leu Gly Tyr Asp Thr Val Gln Val Gly Gly Ile Ser Asp Thr Asn
 145 150 155 160
 Gln Ile Phe Gly Leu Ser Glu Thr Glu Pro Gly Ser Phe Leu Tyr Tyr
 165 170 175
 Ala Pro Phe Asp Gly Ile Leu Gly Leu Ala Tyr Pro Ser Ile Ser Ser
 180 185 190
 Ser Gly Ala Thr Pro Val Phe Asp Asn Ile Trp Asn Gln Gly Leu Val
 195 200 205
 Ser Gln Asp Leu Phe Ser Val Tyr Leu Ser Ala Asp Asp Lys Ser Gly
 210 215 220
 Ser Val Val Ile Phe Gly Gly Ile Asp Ser Ser Tyr Tyr Thr Gly Ser
 225 230 235 240
 Leu Asn Trp Val Pro Val Thr Val Glu Gly Tyr Trp Gln Ile Thr Val
 245 250 255
 Asp Ser Ile Thr Met Asn Gly Glu Thr Ile Ala Cys Ala Glu Gly Cys
 260 265 270
 Gln Ala Ile Val Asp Thr Gly Thr Ser Leu Leu Thr Gly Pro Thr Ser
 275 280 285
 Pro Ile Ala Asn Ile Gln Ser Asp Ile Gly Ala Ser Glu Asn Ser Asp
 290 295 300

Gly Asp Met Val Val Ser Cys Ser Ala Ile Ser Ser Leu Pro Asp Ile
305 310 315 320

Val Phe Thr Ile Asn Gly Val Gln Tyr Pro Val Pro Pro Ser Ala Tyr
325 330 335

Ile Leu Gln Ser Glu Gly Ser Cys Ile Ser Gly Phe Gln Gly Met Asn
340 345 350

Val Pro Thr Glu Ser Gly Glu Leu Trp Ile Leu Gly Asp Val Phe Ile
355 360 365

Arg Gln Tyr Phe Thr Val Phe Glu Arg Ala Asn Asn Gln Val Gly Leu
370 375 380

Ala Pro Val Ala
385

<210> 132

<211> 328

<212> PRT

<213> *Macaca fuscata*

<400> 132

Met Lys Trp Leu Leu Leu Gly Leu Val Ala Leu Ser Glu Cys Ile
1 5 10 15

Ile His Lys Val Pro Leu Val Arg Lys Lys Ser Leu Arg Arg Asn Leu
20 25 30

Ser Glu His Gly Leu Leu Lys Asp Phe Leu Lys Lys His Asn Phe Asn
35 40 45

Pro Ala Ser Lys Tyr Phe Pro Gln Ala Glu Ala Pro Thr Leu Ile Asp
50 55 60

Glu Gln Pro Leu Glu Asn Tyr Leu Asp Met Glu Tyr Phe Gly Thr Ile
65 70 75 80

Gly Ile Gly Thr Pro Ala Gln Asp Phe Thr Val Ile Phe Asp Thr Gly
85 90 95

Ser Ser Asn Leu Trp Val Pro Ser Val Tyr Cys Ser Ser Leu Ala Cys
100 105 110

Thr Asn His Asn Arg Phe Asn Pro Gln Asp Ser Ser Thr Tyr Gln Ser
115 120 125

Thr Ser Gly Thr Val Ser Ile Thr Tyr Gly Thr Gly Ser Met Thr Gly
 130 135 140
 Ile Leu Gly Tyr Asp Thr Val Gln Val Gly Gly Ile Ser Asp Thr Asn
 145 150 155 160
 Gln Ile Phe Gly Leu Ser Glu Thr Glu Pro Gly Ser Phe Leu Tyr Tyr
 165 170 175
 Ala Pro Phe Asp Gly Ile Leu Gly Leu Ala Tyr Pro Ser Ile Ser Ser
 180 185 190
 Ser Gly Ala Thr Pro Val Phe Asp Asn Ile Trp Asn Gln Gly Leu Val
 195 200 205
 Ser Gln Asp Leu Phe Ser Val Tyr Leu Ser Ala Asp Asp Gln Ser Gly
 210 215 220
 Ser Val Val Ile Phe Gly Gly Ile Asp Ser Ser Tyr Tyr Thr Gly Ser
 225 230 235 240
 Leu Asn Trp Val Pro Val Ser Val Glu Gly Tyr Trp Gln Ile Ser Val
 245 250 255
 Asp Ser Ile Thr Met Asn Gly Glu Ala Ile Ala Cys Ala Glu Gly Cys
 260 265 270
 Gln Ala Ile Val Asp Thr Gly Thr Ser Leu Leu Thr Ile Ser Gly Phe
 275 280 285
 Gln Gly Met Asp Val Pro Thr Glu Ser Gly Glu Leu Trp Ile Leu Gly
 290 295 300
 Asp Val Phe Ile Arg Gln Tyr Phe Thr Val Phe Asp Arg Ala Asn Asn
 305 310 315 320
 Gln Val Gly Leu Ala Pro Val Ala
 325

<210> 133

<211> 369

<212> PRT

<213> Homo sapiens

<400> 133

Lys Val Pro Leu Ile Arg Lys Lys Ser Leu Arg Arg Thr Leu Ser Glu

1	5	10	15
Arg Gly Leu Leu Lys Asp Phe Leu Lys Lys His Asn Leu Asn Pro Ala	20	25	30
Arg Lys Tyr Phe Pro Gln Trp Glu Ala Pro Thr Leu Val Asp Glu Gln	35	40	45
Pro Leu Glu Asn Tyr Leu Asp Met Glu Tyr Phe Gly Thr Ile Gly Ile	50	55	60
Gly Thr Pro Ala Gln Asp Phe Thr Val Leu Phe Asp Thr Gly Ser Ser	65	70	75
Asn Leu Trp Val Pro Ser Val Tyr Cys Ser Ser Leu Ala Cys Thr Asn	85	90	95
His Asn Arg Phe Asn Pro Glu Asp Ser Ser Thr Tyr Gln Ala Thr Ser	100	105	110
Glu Thr Val Ser Ile Thr Tyr Gly Thr Gly Ser Met Thr Gly Ile Leu	115	120	125
Gly Tyr Asp Thr Val Gln Val Gly Gly Ile Ser Asp Thr Asn Gln Ile	130	135	140
Phe Gly Leu Ser Glu Thr Glu Pro Gly Ser Phe Leu Tyr Tyr Ala Pro	145	150	155
Phe Asp Gly Ile Leu Gly Leu Ala Tyr Pro Ser Ile Ser Ser Ser Gly	165	170	175
Ala Thr Pro Val Phe Asp Asn Ile Trp Asn Gln Gly Leu Val Ser Gln	180	185	190
Asp Leu Phe Ser Val Tyr Leu Ser Ala Asp Asp Gln Ser Gly Ser Val	195	200	205
Val Ile Phe Gly Gly Ile Asp Ser Ser Tyr Tyr Thr Gly Ser Leu Asn	210	215	220
Trp Val Pro Val Thr Val Glu Gly Tyr Trp Gln Ile Thr Val Asp Ser	225	230	235
Ile Thr Met Asn Gly Glu Ala Ile Ala Cys Ala Glu Gly Cys Gln Ala	245	250	255
Ile Val Asp Thr Gly Thr Ser Leu Leu Thr Gly Pro Thr Ser Pro Ile			

Leu Trp Val Pro Ser Val Tyr Cys Thr Ser Ser Tyr Ala Cys Lys Gly
 85 90 95

His Gly Thr Phe Asp Pro Ser Lys Ser Ser Thr Tyr Lys Asn Leu Gly
 100 105 110

Thr Thr Phe Ser Ile Ser Tyr Gly Asp Gly Ser Ser Ala Ser Gly Phe
 115 120 125

Leu Gly Gln Asp Thr Val Thr Val Gly Gly Ile Thr Val Thr Asn Gln
 130 135 140

Gln Phe Gly Leu Ala Thr Lys Glu Pro Gly Ser Phe Phe Ala Thr Ala
 145 150 155 160

Val Phe Asp Gly Ile Leu Gly Leu Gly Phe Pro Ser Ile Glu Ala Gly
 165 170 175

Gly Pro Tyr Thr Pro Val Phe Asp Asn Leu Lys Ser Gln Gly Leu Ile
 180 185 190

Asp Ser Pro Ala Phe Ser Val Tyr Leu Asn Ser Asp Ser Gly Ala Gly
 195 200 205

Gly Glu Ile Ile Phe Gly Gly Val Asp Pro Ser Lys Tyr Thr Gly Ser
 210 215 220

Leu Thr Trp Val Pro Val Thr Ser Gln Gly Tyr Trp Gln Ile Thr Leu
 225 230 235 240

Asp Ser Ile Thr Val Gly Gly Ser Thr Thr Phe Cys Ser Ser Gly Cys
 245 250 255

Gln Ala Ile Leu Asp Thr Gly Thr Ser Leu Leu Tyr Gly Pro Thr Ser
 260 265 270

Ile Val Ser Lys Ile Ala Lys Ala Val Gly Ala Ser Leu Ser Glu Tyr
 275 280 285

Ser Gly Glu Tyr Val Ile Asp Cys Asp Ser Ile Ser Ser Leu Pro Asp
 290 295 300

Ile Thr Phe Phe Ile Gly Gly Ala Lys Ile Thr Val Pro Pro Ser Ala
 305 310 315 320

Tyr Val Leu Gln Pro Ser Ser Gly Gly Ser Asp Ile Cys Leu Ser Gly
 325 330 335

Phe Gln Ser Asp Asp Ile Pro Gly Gly Pro Leu Trp Ile Leu Gly Asp
 340 345 350

Val Phe Leu Arg Ser Ala Tyr Val Val Phe Asp Arg Asp Asn Asn Arg
 355 360 365

Ile Gly Leu Ala Pro Ala
 370

<210> 135

<211> 208

<212> PRT

<213> Mus musculus

<400> 135

Met Lys Val Thr Leu Val His Leu Leu Phe Met Met Leu Leu Leu Leu
 1 5 10 15

Leu Gly Leu Gly Leu Gly Leu Gly Leu Gly Leu His Met Ala Ala Ala
 20 25 30

Val Leu Glu Asp Gln Pro Leu Asn Glu Phe Trp Pro Ser Asp Ser Gln
 35 40 45

Asn Thr Glu Glu Gly Glu Gly Ile Trp Thr Thr Glu Gly Leu Ala Leu
 50 55 60

Gly Tyr Lys Glu Met Ala Gln Pro Val Trp Pro Glu Glu Ala Val Leu
 65 70 75 80

Ser Glu Asp Glu Val Gly Gly Ser Arg Met Leu Arg Ala Glu Pro Arg
 85 90 95

Phe Gln Ser Lys Gln Asp Tyr Leu Lys Phe Asp Leu Ser Val Arg Asp
 100 105 110

Cys Asn Thr Met Met Ala His Lys Ile Lys Glu Pro Asn Gln Ser Cys
 115 120 125

Ile Asn Gln Tyr Thr Phe Ile His Glu Asp Pro Asn Thr Val Lys Ala
 130 135 140

Val Cys Asn Gly Ser Leu Val Asp Cys Asp Leu Gln Gly Gly Lys Cys
 145 150 155 160

Tyr Lys Ser Pro Arg Pro Phe Asp Leu Thr Leu Cys Lys Leu Ala Lys

<210> 137
 <211> 125
 <212> PRT
 <213> Homo sapiens

<220>
 <221> VARIANT
 <222> (1)
 <223> Where Xaa is any amino acid

<400> 137
 Xaa Lys Glu Ser Ala Ala Ala Lys Phe Glu Arg Gln His Met Asp Ser
 1 5 10 15

 Gly Asn Ser Pro Ser Ser Ser Ser Thr Tyr Cys Asn Gln Met Met Arg
 20 25 30

 Arg Arg Asn Met Thr Gln Gly Arg Cys Lys Pro Val Asn Thr Phe Val
 35 40 45

 His Glu Ser Leu Val Asp Val Gln Asn Val Cys Phe Gln Glu Lys Val
 50 55 60

 Thr Cys Lys Asn Gly Gln Gly Asn Cys Tyr Lys Ser Asn Ser Ser Met
 65 70 75 80

 His Ile Thr Asp Cys Arg Leu Thr Asn Gly Ser Arg Tyr Pro Asn Cys
 85 90 95

 Ala Tyr Arg Thr Ser Pro Lys Glu Arg His Ile Ile Val Ala Cys Glu
 100 105 110

 Gly Ser Pro Tyr Val Pro Val His Phe Asp Ala Ser Val
 115 120 125

<210> 138
 <211> 128
 <212> PRT
 <213> Presbytis entellus

<400> 138
 Gly Glu Ser Arg Ala Glu Lys Phe Gln Arg Gln His Met Asp Ser Gly
 1 5 10 15

 Ser Ser Pro Ser Ser Ser Ser Thr Tyr Cys Asn Gln Met Met Lys Leu
 20 25 30

Arg Asn Met Thr Gln Gly Ser Cys Lys Ser Val Asn Thr Phe Val His
35 40 45

Glu Pro Leu Val Asp Val Gln Asn Val Cys Phe Gln Glu Lys Val Thr
50 55 60

Cys Lys Asn Gly Gln Thr Asn Cys Phe Lys Ser Asn Ser Arg Met His
65 70 75 80

Ile Thr Glu Cys Arg Leu Thr Asn Gly Ser Lys Tyr Pro Asn Cys Ala
85 90 95

Tyr Gly Thr Ser Pro Lys Glu Arg His Ile Ile Val Ala Cys Glu Gly
100 105 110

Ser Pro Tyr Val Pro Val His Phe Asp Asp Ser Val Glu Asp Ser Thr
115 120 125

<210> 139

<211> 119

<212> PRT

<213> Iguana iguana

<400> 139

Gln Asp Trp Ser Ser Phe Gln Asn Lys His Ile Asp Tyr Pro Glu Thr
1 5 10 15

Ser Ala Ser Asn Pro Asn Ala Tyr Cys Asp Leu Met Met Gln Arg Arg
20 25 30

Asn Leu Asn Pro Thr Lys Cys Lys Thr Arg Asn Thr Phe Val His Ala
35 40 45

Ser Pro Ser Glu Ile Gln Gln Val Cys Gly Ser Gly Gly Thr His Tyr
50 55 60

Glu Asp Asn Leu Tyr Asp Ser Asn Glu Ser Phe Asp Leu Thr Asp Cys
65 70 75 80

Lys Asn Val Gly Gly Thr Ala Pro Ser Ser Cys Lys Tyr Asn Gly Thr
85 90 95

Pro Gly Thr Lys Arg Ile Arg Ile Ala Cys Glu Asn Asn Gln Pro Val

	100	105	110
His Phe Glu Leu Val Leu Ser			
115			
<210> 140			
<211> 105			
<212> PRT			
<213> Homo sapiens			
<400> 140			
His Val Asp Tyr Pro Gln Asn Asp Val Pro Val Pro Ala Arg Tyr Cys			
1 5 10 15			
Asn His Met Ile Ile Gln Arg Val Ile Arg Glu Pro Asp His Thr Cys			
20 25 30			
Lys Lys Glu His Val Phe Ile His Glu Arg Pro Arg Lys Ile Asn Gly			
35 40 45			
Ile Cys Ile Ser Pro Lys Lys Val Ala Cys Gln Asn Leu Ser Ala Ile			
50 55 60			
Phe Cys Phe Gln Ser Glu Thr Lys Phe Lys Met Thr Val Cys Gln Leu			
65 70 75 80			
Ile Glu Gly Thr Arg Tyr Pro Ala Cys Arg Tyr His Tyr Ser Pro Thr			
85 90 95			
Glu Gly Phe Val Leu Val Thr Cys Asp			
100 105			
<210> 141			
<211> 99			
<212> PRT			
<213> Artificial Sequence			
<220>			
<223> Description of Artificial Sequence: RNase_Pc,			
Pancreatic ribonuclease			
<400> 141			
His Ile Asp Ser Thr Pro Ser Ser Ala Ser Asp Asn Tyr Cys Asn Gln			
1 5 10 15			
Met Met Lys Arg Arg Asn Met Thr Gln Gly Arg Cys Lys Pro Val Asn			

<220>

<223> Description of Artificial Sequence: rnaseA,
Pancreatic ribonuclease

<400> 143

Asp Asn Tyr Cys Asn Gln Met Met Lys Arg Arg Asn Met Thr Gln Gly
1 5 10 15
Arg Cys Lys Pro Val Asn Thr Phe Val His Glu Ser Leu Ala Asp Val
20 25 30
Lys Ala Val Cys Ser Gln Lys Asn Val Thr Cys Lys Asn Gly Gln Lys
35 40 45
Asn Cys Tyr Gln Ser Thr Ser Ser Phe Gln Leu Thr Asp Cys Arg Leu
50 55 60
Thr Gly Gly Ser Lys Tyr Pro Asn Cys Arg Tyr Arg Thr Thr Pro Gly
65 70 75 80
Asn Lys Arg Ile Ile Val Ala Cys Glu
85

<210> 144

<211> 698

<212> PRT

<213> Mus musculus

<400> 144

Met Glu Lys Tyr Glu Arg Ile Arg Val Val Gly Arg Gly Ala Phe Gly
1 5 10 15
Ile Val His Leu Cys Leu Arg Lys Ala Asp Gln Lys Leu Val Ile Leu
20 25 30
Lys Gln Ile Pro Val Glu Gln Met Thr Lys Glu Glu Arg Gln Ala Ala
35 40 45
Gln Asn Glu Cys Gln Val Leu Lys Leu Leu Asn His Pro Asn Val Ile
50 55 60
Glu Tyr Tyr Glu Asn Phe Leu Glu Asp Lys Ala Leu Met Ile Ala Met
65 70 75 80
Glu Tyr Ala Pro Gly Gly Thr Leu Ala Glu Phe Ile Gln Lys Arg Cys
85 90 95

Asn Ser Leu Leu Glu Glu Glu Thr Ile Leu His Phe Phe Val Gln Ile
 100 105 110
 Leu Leu Ala Leu His His Val His Thr His Leu Ile Leu His Arg Asp
 115 120 125
 Leu Lys Thr Gln Asn Ile Leu Leu Asp Lys His Arg Met Val Val Lys
 130 135 140
 Ile Gly Asp Phe Gly Ile Ser Lys Ile Leu Ser Ser Lys Ser Lys Ala
 145 150 155 160
 Tyr Thr Val Val Gly Thr Pro Cys Tyr Ile Ser Pro Glu Leu Cys Glu
 165 170 175
 Gly Lys Pro Tyr Asn Gln Lys Ser Asp Ile Trp Ala Leu Gly Cys Val
 180 185 190
 Leu Tyr Glu Leu Ala Ser Leu Lys Arg Ala Phe Glu Ala Ala Asn Leu
 195 200 205
 Pro Ala Leu Val Leu Lys Ile Met Ser Gly Thr Phe Ala Pro Ile Ser
 210 215 220
 Asp Arg Tyr Ser Pro Glu Leu Arg Gln Leu Val Leu Ser Leu Leu Ser
 225 230 235 240
 Leu Glu Pro Ala Gln Arg Pro Pro Leu Ser His Ile Met Ala Gln Pro
 245 250 255
 Leu Cys Ile Arg Ala Leu Leu Asn Ile His Thr Asp Val Gly Ser Val
 260 265 270
 Arg Met Arg Arg Ala Glu Lys Ser Leu Thr Pro Gly Pro Pro Ile Ala
 275 280 285
 Ser Gly Ser Thr Gly Ser Arg Ala Thr Ser Ala Arg Cys Arg Gly Val
 290 295 300
 Pro Arg Gly Pro Val Arg Pro Ala Ile Pro Pro Pro Leu Ser Ser Val
 305 310 315 320
 Tyr Ala Trp Gly Gly Gly Leu Ser Ser Pro Leu Arg Leu Pro Met Leu
 325 330 335
 Asn Thr Glu Val Val Gln Val Ala Ala Gly Arg Thr Gln Lys Ala Gly
 340 345 350

Val Thr Arg Ser Gly Arg Leu Ile Leu Trp Glu Ala Pro Pro Leu Gly
355 360 365
Ala Gly Gly Gly Thr Leu Leu Pro Gly Ala Val Glu Leu Pro Gln Pro
370 375 380
Gln Phe Val Ser Arg Phe Leu Glu Gly Gln Ser Gly Val Thr Ile Lys
385 390 395 400
His Val Ala Cys Gly Asp Leu Phe Thr Ala Cys Leu Thr Asp Arg Gly
405 410 415
Ile Ile Met Thr Phe Gly Ser Gly Ser Asn Gly Cys Leu Gly His Gly
420 425 430
Asn Leu Thr Asp Ile Ser Gln Pro Thr Ile Val Glu Ala Leu Leu Gly
435 440 445
Tyr Glu Met Val Gln Val Ala Cys Gly Ala Ser His Val Leu Ala Leu
450 455 460
Ser Thr Asp Gly Glu Leu Phe Ala Trp Gly Arg Gly Asp Gly Gly Arg
465 470 475 480
Leu Gly Leu Gly Thr Arg Glu Ser His Asn Cys Pro Gln Gln Val Pro
485 490 495
Val Ala Pro Gly Gln Glu Ala Gln Arg Val Val Cys Gly Ile Asp Ser
500 505 510
Ser Met Ile Leu Thr Ser Pro Gly Arg Val Leu Ala Cys Gly Ser Asn
515 520 525
Arg Phe Asn Lys Leu Gly Leu Asp His Leu Ser Leu Asp Glu Glu Pro
530 535 540
Val Pro Tyr Gln Gln Val Glu Glu Ala Leu Ser Phe Thr Pro Leu Gly
545 550 555 560
Ser Ala Pro Leu Asp Gln Glu Pro Leu Leu Cys Val Asp Leu Gly Thr
565 570 575
Ala His Ser Ala Ala Ile Thr Ala Ser Gly Asp Cys Tyr Thr Phe Gly
580 585 590
Ser Asn Gln His Gly Gln Leu Gly Thr Ser Ser Arg Arg Val Ser Arg
595 600 605

Ala Pro Cys Arg Val Gln Gly Leu Glu Gly Ile Lys Met Val Met Val
610 615 620

Ala Cys Gly Asp Ala Phe Thr Val Ala Val Gly Ala Glu Gly Glu Val
625 630 635 640

Tyr Ser Trp Gly Lys Gly Thr Arg Gly Arg Leu Gly Arg Arg Asp Glu
645 650 655

Asp Ala Gly Leu Pro Arg Pro Val Gln Leu Asp Glu Thr His Pro Tyr
660 665 670

Met Val Thr Ser Val Ser Cys Cys His Gly Asn Thr Leu Leu Ala Val
675 680 685

Arg Ser Val Thr Asp Glu Pro Val Pro Pro
690 695

<210> 145

<211> 291

<212> PRT

<213> Mus musculus

<400> 145

Met Glu Lys Tyr Glu Arg Ile Arg Val Val Gly Arg Gly Ala Leu Gly
1 5 10 15

Ile Val His Leu Cys Leu Arg Lys Ala Asp Gln Lys Leu Val Ile Leu
20 25 30

Lys Gln Ile Pro Val Glu Gln Met Thr Lys Glu Glu Arg Gln Ala Ala
35 40 45

Gln Asn Glu Cys Gln Val Leu Lys Leu Leu Asn His Pro Asn Val Ile
50 55 60

Glu Tyr Tyr Glu Asn Phe Leu Glu Asp Lys Ala Leu Met Ile Ala Met
65 70 75 80

Glu Tyr Ala Pro Gly Gly Thr Leu Ala Glu Phe Ile Gln Lys Arg Cys
85 90 95

Asn Ser Leu Leu Glu Glu Glu Thr Ile Leu His Phe Phe Val Gln Ile
100 105 110

Leu Leu Ala Leu His His Val His Thr His Leu Ile Leu His Arg Asp
115 120 125

Leu Lys Thr Gln Asn Ile Leu Leu Asp Lys His Arg Met Val Val Lys
 130 135 140

Ile Gly Asp Phe Gly Ile Ser Lys Ile Leu Ser Ser Lys Ser Lys Ala
 145 150 155 160

Tyr Thr Val Val Gly Thr Pro Cys Tyr Ile Ser Pro Glu Leu Cys Glu
 165 170 175

Gly Lys Pro Tyr Asn Gln Lys Ser Asp Ile Trp Ala Leu Gly Cys Val
 180 185 190

Leu Tyr Glu Leu Ala Ser Leu Lys Arg Ala Phe Glu Ala Ala Asn Leu
 195 200 205

Pro Ala Leu Val Leu Lys Ile Met Ser Gly Thr Phe Ala Pro Ile Ser
 210 215 220

Asp Arg Tyr Ser Pro Glu Leu Arg Gln Leu Val Leu Ser Leu Leu Ser
 225 230 235 240

Leu Glu Pro Ala Gln Gly Pro Pro Leu Ser His Ile Met Ala Gln Pro
 245 250 255

Leu Cys Ile Arg Ala Leu Leu Asn Ile His Thr Asp Val Gly Ser Val
 260 265 270

Arg Met Arg Arg Pro Val Gln Gly Asp Gly Ser Trp Gly Gly His Pro
 275 280 285

Val Arg Thr
 290

<210> 146

<211> 696

<212> PRT

<213> Danio rerio

<400> 146

Met Glu Lys Tyr Glu Lys Thr Lys Val Val Gly Arg Gly Ala Phe Gly
 1 5 10 15

Ile Val His Leu Cys Arg Arg Arg Thr Asp Ser Ala Leu Val Ile Leu
 20 25 30

Lys Glu Ile Pro Val Glu Gln Met Thr Arg Asp Glu Arg Leu Ala Ala

290	295	300
Leu Ser Ser Leu Thr Ser Ser Lys Met Met His Pro Leu Pro Leu Phe		
305	310	315 320
Ser Val Tyr Thr Trp Gly Ser Gly Ile Ser Thr Pro Leu Arg Leu Pro		
	325	330 335
Met Leu Asn Thr Glu Val Ile Gln Val Ser Leu Gly Arg Thr Gln Lys		
	340	345 350
Met Gly Val Thr Lys Ser Arg Leu Ile Thr Trp Glu Ala Pro Ser Val		
	355	360 365
Gly Ser Gly Glu Pro Thr Leu Pro Gly Ala Val Glu Gln Met Gln Pro		
	370	375 380
Gln Phe Ile Ser Arg Phe Leu Glu Gly Gln Ser Gly Val Thr Ile Lys		
	385	390 395 400
Ser Val Ser Cys Gly Asp Leu Phe Thr Thr Cys Leu Thr Asp Arg Gly		
	405	410 415
Ile Ile Met Thr Phe Gly Ser Gly Ser Asn Gly Cys Leu Gly His Gly		
	420	425 430
Asn Phe Asn Asp Val Thr Gln Pro Lys Ile Val Glu Ala Leu Leu Gly		
	435	440 445
Tyr Glu Leu Val Gln Val Ser Cys Gly Ala Ser His Val Leu Ala Val		
	450	455 460
Thr Asn Glu Arg Glu Val Phe Ser Trp Gly Arg Gly Asp Asn Gly Arg		
	465	470 475 480
Leu Gly Leu Ala Thr Gln Asp Ser His Asn Cys Pro Gln Gln Val Ser		
	485	490 495
Leu Pro Ala Asp Phe Glu Ala Gln Arg Val Leu Cys Gly Val Asp Cys		
	500	505 510
Ser Met Ile Met Ser Thr Gln His Gln Ile Leu Ala Cys Gly Asn Asn		
	515	520 525
Arg Phe Asn Lys Leu Gly Leu Asp Lys Val Ser Gly Thr Glu Glu Pro		
	530	535 540
Ser Ser Phe Cys Gln Val Glu Glu Val His Leu Phe Gln Leu Val Gln		

545 550 555 560
 Ser Ala Pro Leu Asn Thr Glu Lys Ile Val Tyr Ile Asp Ile Gly Thr
 565 570 575
 Ala His Ser Val Ala Val Thr Glu Lys Gly Gln Cys Phe Thr Phe Gly
 580 585 590
 Ser Asn Gln His Gly Gln Leu Gly Cys Ser His Arg Arg Ser Ser Arg
 595 600 605
 Val Pro Tyr Gln Val Ser Gly Leu Gln Gly Ile Thr Met Ala Ala Cys
 610 615 620
 Gly Asp Ala Phe Thr Leu Ala Ile Gly Ala Glu Gly Glu Val Tyr Thr
 625 630 635 640
 Trp Gly Lys Gly Ala Arg Gly Arg Leu Gly Arg Lys Glu Glu Asp Phe
 645 650 655
 Gly Ile Pro Lys Pro Val Gln Leu Asp Glu Ser His Ala Phe Thr Val
 660 665 670
 Thr Ser Val Ala Cys Cys His Gly Asn Thr Leu Leu Ala Val Lys Pro
 675 680 685
 Phe Phe Glu Glu Pro Gly Pro Lys
 690 695

<210> 147
 <211> 357
 <212> PRT
 <213> Caenorhabditis elegans

<400> 147
 Met Asp Asn Tyr Glu Lys Val Arg Val Val Gly Arg Gly Ala Phe Gly
 1 5 10 15
 Val Cys Trp Leu Cys Arg Gly Lys Asn Asp Ala Ser His Gln Lys Val
 20 25 30
 Ile Ile Lys Leu Ile Asn Thr His Gly Met Thr Glu Lys Glu Glu Asn
 35 40 45
 Ser Ile Gln Ser Glu Val Asn Leu Leu Lys Lys Val Gln His Pro Leu
 50 55 60

Ile	Ile	Gly	Tyr	Ile	Asp	Ser	Phe	Ile	Met	Asp	Asn	Gln	Leu	Gly	Ile	65	70	75	80
Val	Met	Gln	Tyr	Ala	Glu	Gly	Gly	Thr	Leu	Glu	Arg	Leu	Ile	Asn	Asp	85	90	95	
Gln	Arg	Ala	Ile	Lys	Asp	Ser	Asn	Met	Arg	Glu	Tyr	Phe	Pro	Glu	Lys	100	105	110	
Thr	Val	Leu	Asp	Tyr	Phe	Thr	Gln	Ile	Leu	Ile	Ala	Leu	Asn	His	Met	115	120	125	
His	Gln	Lys	Asn	Ile	Val	His	Arg	Asp	Leu	Lys	Pro	Gln	Asn	Ile	Leu	130	135	140	
Met	Asn	Arg	Arg	Lys	Thr	Val	Leu	Lys	Leu	Ser	Asp	Phe	Gly	Ile	Ser	145	150	155	160
Lys	Glu	Leu	Gly	Thr	Lys	Ser	Ala	Ala	Ser	Thr	Val	Ile	Gly	Thr	Pro	165	170	175	
Asn	Tyr	Leu	Ser	Pro	Glu	Ile	Cys	Glu	Ser	Arg	Pro	Tyr	Asn	Gln	Lys	180	185	190	
Ser	Asp	Met	Trp	Ser	Leu	Gly	Cys	Val	Leu	Tyr	Glu	Leu	Leu	Gln	Leu	195	200	205	
Glu	Arg	Ala	Phe	Asp	Gly	Glu	Asn	Leu	Pro	Ala	Ile	Val	Met	Lys	Ile	210	215	220	
Thr	Arg	Ser	Lys	Gln	Asn	Pro	Leu	Gly	Asp	His	Val	Ser	Asn	Asp	Val	225	230	235	240
Lys	Met	Leu	Val	Glu	Asn	Leu	Leu	Lys	Thr	His	Thr	Asp	Lys	Arg	Pro	245	250	255	
Asp	Val	Ser	Gln	Leu	Leu	Ser	Asp	Pro	Leu	Val	Leu	Pro	Tyr	Leu	Ile	260	265	270	
Ser	Ile	His	Cys	Asp	Leu	Gly	Arg	Ile	Glu	Pro	Pro	Pro	Thr	Asp	Lys	275	280	285	
Arg	Lys	Pro	Ser	Ala	Ser	Leu	Ser	Ser	Arg	Leu	Arg	Thr	Tyr	Pro	Thr	290	295	300	
Gln	Ser	Thr	Leu	Arg	Pro	Tyr	Ser	Leu	Ser	Ser	Asn	Ala	Pro	Thr	Thr	305	310	315	320

His Leu Thr Gln Leu Thr Pro Met Pro Ser His Ile Asp Ser Gly Phe
325 330 335

Phe Ser Ser Gly Arg Thr Ser Asn Gln Arg Thr Gln Ser Arg Ser Gln
340 345 350

Val His Ser Lys Tyr
355

<210> 148

<211> 841

<212> PRT

<213> *Drosophila melanogaster*

<400> 148

Met Lys Lys Phe Arg Ala Lys Ala Ser Ser Leu Pro Ile Phe Asn Gly
1 5 10 15

Arg Ile Thr Asp Ala Thr Thr Leu Thr Thr Ser Ser Leu Gln Leu Pro
20 25 30

Leu Gly Gln Asn Thr Gln Arg Lys Gln Ser Thr Cys Thr Arg Val Leu
35 40 45

Pro Thr Val Phe Thr Ile Thr Asp Gly Thr Thr Gly Ala Ala Ser Thr
50 55 60

Ser Leu Ala Glu Ala Met Ser Ser Ser Lys Ala Gln Met Pro Asn Arg
65 70 75 80

Gln Glu Ser Leu Leu Gln Leu Ser Val Pro Arg Glu Thr Gly Val Gly
85 90 95

Val Ala Gly Pro Glu Leu Ala Asn Tyr Glu Lys Val Arg Val Val Gly
100 105 110

Gln Gly Ser Phe Gly Ile Ala Ile Leu Tyr Arg Arg Lys Ser Asp Gly
115 120 125

His Gln Ile Val Phe Lys Gln Ile Asn Leu Ser Glu Leu Ser Pro Pro
130 135 140

Gly Arg Asp Leu Ala Met Asn Glu Val Asp Val Phe Ser Lys Leu His
145 150 155 160

His Pro Asn Ile Val Ser Tyr Leu Gly Ser Phe Ile Lys Asp Asn Thr
165 170 175

Leu Leu Ile Glu Met Glu Tyr Ala Asp Gly Gly Thr Leu Ala Gln Ile
 180 185 190
 Ile Ala Glu Arg Gln Gly Lys Leu His Phe Pro Glu Arg Tyr Ile Ile
 195 200 205
 Ala Val Phe Glu Gln Ile Ser Ser Ala Ile Asn Tyr Met His Ser Glu
 210 215 220
 Asn Ile Leu His Arg Asp Leu Lys Thr Ala Asn Val Phe Leu Asn Arg
 225 230 235 240
 Arg Gly Ile Val Lys Ile Gly Asp Phe Gly Ile Ser Lys Ile Met Asn
 245 250 255
 Thr Lys Ile His Ala Gln Thr Val Leu Gly Thr Pro Tyr Tyr Phe Ser
 260 265 270
 Pro Glu Met Cys Glu Gly Lys Glu Tyr Asp Asn Lys Ser Asp Ile Trp
 275 280 285
 Ala Leu Gly Cys Ile Leu Gly Glu Met Cys Cys Leu Lys Lys Thr Phe
 290 295 300
 Ala Ala Ser Asn Leu Ser Glu Leu Val Thr Lys Ile Met Ala Gly Asn
 305 310 315 320
 Tyr Thr Pro Val Pro Ser Gly Tyr Thr Ser Gly Leu Arg Ser Leu Met
 325 330 335
 Ser Asn Leu Leu Gln Val Glu Ala Pro Arg Arg Pro Thr Ala Ser Glu
 340 345 350
 Val Leu Val Tyr Trp Ile Pro Leu Ile Phe Arg Ser Leu Gly Lys Asn
 355 360 365
 Lys Gly Tyr Ser Tyr Glu Asp Asp Val Gly Gly Pro Gly Ser Asp Gln
 370 375 380
 Leu Thr Ala Pro Val Pro Ala Ala Ala Tyr Ser Asn Val Ser Met Glu
 385 390 395 400
 Leu Glu Leu Pro Thr Ala Gln Thr Glu Thr Lys Gln Leu Met Ile Ala
 405 410 415
 Asp Thr Ala Ala Pro His Glu Ile Leu Glu Lys Arg Ser Val Leu Tyr
 420 425 430

Gln Leu Lys Ala Phe Gly Thr Cys Phe Ser Met Ala Pro Ile Gln Leu
 435 440 445
 Pro Pro Lys Ala Val Ile Val Asp Val Ala Met Ser Asp Ser His Phe
 450 455 460
 Val Val Val Asn Glu Asp Gly Ser Ala Tyr Ala Trp Gly Glu Gly Thr
 465 470 475 480
 His Gly Gln Leu Gly Leu Thr Ala Leu Glu Ala Trp Lys His Tyr Pro
 485 490 495
 Ser Arg Met Glu Ser Val Arg Asn Tyr His Val Val Ser Ala Cys Ala
 500 505 510
 Gly Asp Gly Phe Thr Ile Leu Val Thr Gln Ala Gly Ser Leu Leu Ser
 515 520 525
 Cys Gly Ser Asn Ala His Leu Ala Leu Gly Gln Asp Glu Gln Arg Asn
 530 535 540
 Tyr His Ser Pro Lys Leu Ile Ala Arg Leu Ala Asp Val Arg Val Glu
 545 550 555 560
 Gln Val Ala Ala Gly Leu Gln His Val Leu Ala Leu Ser Arg Glu Gly
 565 570 575
 Ala Val Tyr Val Trp Gly Thr Ser Thr Cys Gly Ala Leu Gly Leu Gly
 580 585 590
 Asn Tyr Gln Gln Gln Gln Lys Phe Pro Gln Lys Ile Leu Leu Ser His
 595 600 605
 Val Lys Thr Lys Pro Ser Lys Ile Tyr Cys Gly Pro Asp Thr Ser Ala
 610 615 620
 Val Leu Phe Ala Asn Gly Glu Leu His Val Cys Gly Ser Asn Asp Tyr
 625 630 635 640
 Asn Lys Leu Gly Phe Gln Arg Ser Ala Lys Ile Thr Ala Phe Lys Lys
 645 650 655
 Val Gln Leu Pro His Lys Val Thr Gln Ala Cys Phe Ser Ser Thr His
 660 665 670
 Ser Val Phe Leu Val Glu Gly Gly Tyr Val Tyr Thr Met Gly Arg Asn
 675 680 685

Ala Glu Gly Gln Arg Gly Ile Arg His Cys Asn Ser Val Asp His Pro
 690 695 700
 Thr Leu Val Asp Ser Val Lys Ser Arg Tyr Ile Val Lys Ala Asn Cys
 705 710 715 720
 Ser Asp Gln Cys Thr Ile Val Ala Ser Glu Asp Asn Ile Ile Thr Val
 725 730 735
 Trp Gly Thr Arg Asn Gly Leu Pro Gly Ile Gly Ser Thr Asn Cys Gly
 740 745 750
 Leu Gly Leu Gln Ile Cys Thr Pro Asn Met Glu Leu Glu Leu Gly Asn
 755 760 765
 Asn Thr Ala Ala Phe Thr Asn Phe Leu Ala Ser Val Tyr Lys Ser Glu
 770 775 780
 Leu Ile Leu Glu Pro Val Asp Ile Leu Ala Leu Phe Ser Ser Lys Glu
 785 790 795 800
 Gln Cys Asp Arg Gly Tyr Tyr Val Gln Val His Asp Val Tyr Pro Leu
 805 810 815
 Ala His Ser Val Leu Val Leu Val Asp Thr Thr Thr Pro Leu Ile Ser
 820 825 830
 Ser Tyr Glu Gly Asp Tyr Pro His Leu
 835 840

 <210> 149
 <211> 253
 <212> PRT
 <213> Homo sapiens

 <400> 149
 Tyr Glu Arg Ile Arg Val Val Gly Arg Gly Ala Phe Gly Ile Val His
 1 5 10 15
 Leu Cys Leu Arg Lys Ala Asp Gln Lys Leu Val Ile Ile Lys Gln Ile
 20 25 30
 Pro Val Glu Gln Met Thr Lys Glu Glu Arg Gln Ala Ala Gln Asn Glu
 35 40 45
 Cys Gln Val Leu Lys Leu Leu Asn His Pro Asn Val Ile Glu Tyr Tyr

50	55	60
Glu Asn Phe Leu Glu Asp Lys Ala Leu Met Thr Ala Met Glu Tyr Ala		
65	70	75 80
Pro Gly Gly Thr Leu Ala Glu Phe Ile Gln Lys Arg Cys Asn Ser Leu		
	85	90 95
Leu Glu Glu Glu Thr Ile Leu His Phe Phe Val Gln Ile Leu Leu Ala		
	100	105 110
Leu His His Val His Thr His Leu Ile Leu His Arg Asp Leu Lys Thr		
	115	120 125
Gln Asn Ile Leu Leu Asp Lys His Arg Met Val Val Lys Ile Gly Asp		
	130	135 140
Phe Gly Ile Ser Lys Ile Leu Ser Ser Lys Ser Lys Ala Tyr Thr Val		
	145	150 155 160
Val Gly Thr Pro Cys Tyr Ile Ser Pro Glu Leu Cys Glu Gly Lys Pro		
	165	170 175
Tyr Asn Gln Lys Ser Asp Ile Trp Ala Leu Gly Cys Val Leu Tyr Glu		
	180	185 190
Leu Ala Ser Leu Lys Arg Ala Phe Glu Ala Ala Asn Leu Pro Ala Leu		
	195	200 205
Val Leu Lys Ile Met Ser Gly Thr Phe Ala Pro Ile Ser Asp Arg Tyr		
	210	215 220
Ser Pro Glu Leu Arg Gln Leu Val Leu Ser Leu Leu Ser Leu Glu Pro		
	225	230 235 240
Ala Gln Arg Pro Pro Leu Ser His Ile Met Ala Gln Pro		
	245	250

<210> 150

<211> 254

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: S_TKc,
Serine/Threonine protein kinases

<400> 150

Tyr Glu Leu Leu Glu Val Leu Gly Lys Gly Ala Phe Gly Lys Val Tyr
1 5 10 15

Leu Ala Arg Asp Lys Lys Thr Gly Lys Leu Val Ala Ile Lys Val Ile
20 25 30

Lys Lys Glu Lys Leu Lys Lys Lys Lys Arg Glu Arg Ile Leu Arg Glu
35 40 45

Ile Lys Ile Leu Lys Lys Leu Asp His Pro Asn Ile Val Lys Leu Tyr
50 55 60

Asp Val Phe Glu Asp Asp Asp Lys Leu Tyr Leu Val Met Glu Tyr Cys
65 70 75 80

Glu Gly Gly Asp Leu Phe Asp Leu Leu Lys Lys Arg Gly Arg Leu Ser
85 90 95

Glu Asp Glu Ala Arg Phe Tyr Ala Arg Gln Ile Leu Ser Ala Leu Glu
100 105 110

Tyr Leu His Ser Gln Gly Ile Ile His Arg Asp Leu Lys Pro Glu Asn
115 120 125

Ile Leu Leu Asp Ser Asp Gly His Val Lys Leu Ala Asp Phe Gly Leu
130 135 140

Ala Lys Gln Leu Asp Ser Gly Gly Thr Leu Leu Thr Thr Phe Val Gly
145 150 155 160

Thr Pro Glu Tyr Met Ala Pro Glu Val Leu Leu Gly Lys Gly Tyr Gly
165 170 175

Lys Ala Val Asp Ile Trp Ser Leu Gly Val Ile Leu Tyr Glu Leu Leu
180 185 190

Thr Gly Lys Pro Pro Phe Pro Gly Asp Asp Gln Leu Leu Ala Leu Phe
195 200 205

Lys Lys Ile Gly Lys Pro Pro Pro Pro Phe Pro Pro Pro Glu Trp Lys
210 215 220

Ile Ser Pro Glu Ala Lys Asp Leu Ile Lys Lys Leu Leu Val Lys Asp
225 230 235 240

Pro Glu Lys Arg Leu Thr Ala Glu Glu Ala Leu Glu His Pro
245 250

<210> 151
<211> 254
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: pkinase,
Protein kinase domain sequence

<400> 151

Tyr	Glu	Leu	Gly	Glu	Lys	Leu	Gly	Ser	Gly	Ala	Phe	Gly	Lys	Val	Tyr
1				5					10					15	
Lys	Gly	Lys	His	Lys	Asp	Thr	Gly	Glu	Ile	Val	Ala	Ile	Lys	Ile	Leu
			20					25						30	
Lys	Lys	Arg	Ser	Leu	Ser	Glu	Lys	Lys	Lys	Arg	Phe	Leu	Arg	Glu	Ile
		35					40					45			
Gln	Ile	Leu	Arg	Arg	Leu	Ser	His	Pro	Asn	Ile	Val	Arg	Leu	Leu	Gly
	50					55					60				
Val	Phe	Glu	Glu	Asp	Asp	His	Leu	Tyr	Leu	Val	Met	Glu	Tyr	Met	Glu
	65				70					75					80
Gly	Gly	Asp	Leu	Phe	Asp	Tyr	Leu	Arg	Arg	Asn	Gly	Leu	Leu	Leu	Ser
			85						90						95
Glu	Lys	Glu	Ala	Lys	Lys	Ile	Ala	Leu	Gln	Ile	Leu	Arg	Gly	Leu	Glu
			100					105						110	
Tyr	Leu	His	Ser	Arg	Gly	Ile	Val	His	Arg	Asp	Leu	Lys	Pro	Glu	Asn
		115					120						125		
Ile	Leu	Leu	Asp	Glu	Asn	Gly	Thr	Val	Lys	Ile	Ala	Asp	Phe	Gly	Leu
	130					135						140			
Ala	Arg	Lys	Leu	Glu	Ser	Ser	Ser	Tyr	Glu	Lys	Leu	Thr	Thr	Phe	Val
	145				150					155					160
Gly	Thr	Pro	Glu	Tyr	Met	Ala	Pro	Glu	Val	Leu	Glu	Gly	Arg	Gly	Tyr
			165						170					175	
Ser	Ser	Lys	Val	Asp	Val	Trp	Ser	Leu	Gly	Val	Ile	Leu	Tyr	Glu	Leu
			180					185						190	

Leu Thr Gly Lys Leu Pro Phe Pro Gly Ile Asp Pro Leu Glu Glu Leu
195 200 205

Phe Arg Ile Lys Glu Arg Pro Arg Leu Arg Leu Pro Leu Pro Pro Asn
210 215 220

Cys Ser Glu Glu Leu Lys Asp Leu Ile Lys Lys Cys Leu Asn Lys Asp
225 230 235 240

Pro Glu Lys Arg Pro Thr Ala Lys Glu Ile Leu Asn His Pro
245 250

<210> 152

<211> 245

<212> PRT

<213> Homo sapiens

<400> 152

Arg Val Val Gly Arg Gly Ala Phe Gly Ile Val His Leu Cys Leu Arg
1 5 10 15

Lys Ala Asp Gln Lys Leu Val Ile Ile Lys Gln Ile Pro Val Glu Gln
20 25 30

Met Thr Lys Glu Glu Arg Gln Ala Ala Gln Asn Glu Cys Gln Val Leu
35 40 45

Lys Leu Leu Asn His Pro Asn Val Ile Glu Tyr Tyr Glu Asn Phe Leu
50 55 60

Glu Asp Lys Ala Leu Met Thr Ala Met Glu Tyr Ala Pro Gly Gly Thr
65 70 75 80

Leu Ala Glu Phe Ile Gln Lys Arg Cys Asn Ser Leu Leu Glu Glu Glu
85 90 95

Thr Ile Leu His Phe Phe Val Gln Ile Leu Leu Ala Leu His His Val
100 105 110

His Thr His Leu Ile Leu His Arg Asp Leu Lys Thr Gln Asn Ile Leu
115 120 125

Leu Asp Lys His Arg Met Val Val Lys Ile Gly Asp Phe Gly Ile Ser
130 135 140

Lys Ile Leu Ser Ser Lys Ser Lys Ala Tyr Thr Val Val Gly Thr Pro
145 150 155 160

Cys Tyr Ile Ser Pro Glu Leu Cys Glu Gly Lys Pro Tyr Asn Gln Lys
165 170 175

Ser Asp Ile Trp Ala Leu Gly Cys Val Leu Tyr Glu Leu Ala Ser Leu
180 185 190

Lys Arg Ala Phe Glu Ala Ala Asn Leu Pro Ala Leu Val Leu Lys Ile
195 200 205

Met Ser Gly Thr Phe Ala Pro Ile Ser Asp Arg Tyr Ser Pro Glu Leu
210 215 220

Arg Gln Leu Val Leu Ser Leu Leu Ser Leu Glu Pro Ala Gln Arg Pro
225 230 235 240

Pro Leu Ser His Ile
245

<210> 153

<211> 250

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: TyrKc,
Tyrosine kinase domain

<400> 153

Lys Lys Leu Gly Glu Gly Ala Phe Gly Glu Val Tyr Lys Gly Thr Leu
1 5 10 15

Lys Gly Lys Gly Gly Val Glu Val Glu Val Ala Val Lys Thr Leu Lys
20 25 30

Glu Asp Ala Ser Glu Gln Gln Ile Glu Glu Phe Leu Arg Glu Ala Arg
35 40 45

Leu Met Arg Lys Leu Asp His Pro Asn Ile Val Lys Leu Leu Gly Val
50 55 60

Cys Thr Glu Glu Glu Pro Leu Met Ile Val Met Glu Tyr Met Glu Gly
65 70 75 80

Gly Asp Leu Leu Asp Tyr Leu Arg Lys Asn Arg Pro Lys Glu Leu Ser
85 90 95

Leu Ser Asp Leu Leu Ser Phe Ala Leu Gln Ile Ala Arg Gly Met Glu
 100 105 110
 Tyr Leu Glu Ser Lys Asn Phe Val His Arg Asp Leu Ala Ala Arg Asn
 115 120 125
 Cys Leu Val Gly Glu Asn Lys Thr Val Lys Ile Ala Asp Phe Gly Leu
 130 135 140
 Ala Arg Asp Leu Tyr Asp Asp Asp Tyr Tyr Arg Lys Lys Lys Ser Pro
 145 150 155 160
 Arg Leu Pro Ile Arg Trp Met Ala Pro Glu Ser Leu Lys Asp Gly Lys
 165 170 175
 Phe Thr Ser Lys Ser Asp Val Trp Ser Phe Gly Val Leu Leu Trp Glu
 180 185 190
 Ile Phe Thr Leu Gly Glu Ser Pro Tyr Pro Gly Met Ser Asn Glu Glu
 195 200 205
 Val Leu Glu Tyr Leu Lys Lys Gly Tyr Arg Leu Pro Gln Pro Pro Asn
 210 215 220
 Cys Pro Asp Glu Ile Tyr Asp Leu Met Leu Gln Cys Trp Ala Glu Asp
 225 230 235 240
 Pro Glu Asp Arg Pro Thr Phe Ser Glu Leu
 245 250

<210> 154
 <211> 488
 <212> PRT
 <213> Mus musculus

<400> 154
 Met Arg Ser Gly Ala Glu Arg Arg Gly Ser Ser Ala Ala Ala Pro Pro
 1 5 10 15
 Ser Ser Pro Pro Pro Gly Arg Ala Arg Pro Ala Gly Ser Glu Val Ser
 20 25 30
 Pro Ala Leu Pro Pro Pro Ala Ala Ser Gln Pro Arg Ala Arg Asp Ala
 35 40 45
 Gly Asp Ala Arg Ala Gln Pro Arg Pro Leu Phe Gln Trp Ser Lys Trp
 50 55 60

Lys Lys Arg Met Ser Met Ser Ser Ile Ser Ser Gly Ser Ala Arg Arg
 65 70 75 80
 Pro Val Phe Asp Asp Lys Glu Asp Val Asn Phe Asp His Phe Gln Ile
 85 90 95
 Leu Arg Ala Ile Gly Lys Gly Ser Phe Gly Lys Val Cys Ile Val Gln
 100 105 110
 Lys Arg Asp Thr Glu Lys Met Tyr Ala Met Lys Tyr Met Asn Lys Gln
 115 120 125
 Gln Cys Ile Glu Arg Asp Glu Val Arg Asn Val Phe Arg Glu Leu Glu
 130 135 140
 Ile Leu Gln Glu Ile Glu His Val Phe Leu Val Asn Leu Trp Tyr Ser
 145 150 155 160
 Phe Gln Asp Glu Glu Asp Met Phe Met Val Val Asp Leu Leu Leu Gly
 165 170 175
 Gly Asp Leu Arg Tyr His Leu Gln Gln Asn Val Gln Phe Ser Glu Asp
 180 185 190
 Thr Val Arg Leu Tyr Ile Cys Glu Met Ala Leu Ala Leu Asp Tyr Leu
 195 200 205
 Arg Ser Gln His Ile Ile His Arg Asp Val Lys Pro Asp Asn Ile Leu
 210 215 220
 Leu Asp Glu Gln Gly His Ala His Leu Thr Asp Phe Asn Ile Ala Thr
 225 230 235 240
 Ile Ile Lys Asp Gly Glu Arg Ala Thr Ala Leu Ala Gly Thr Lys Pro
 245 250 255
 Tyr Met Ala Pro Glu Ile Phe His Ser Phe Val Asn Gly Gly Thr Gly
 260 265 270
 Tyr Ser Phe Glu Val Asp Trp Trp Ser Val Gly Val Met Ala Tyr Glu
 275 280 285
 Leu Leu Arg Gly Trp Arg Pro Tyr Asp Ile His Ser Ser Asn Ala Val
 290 295 300
 Glu Ser Leu Val Gln Leu Phe Ser Thr Val Ser Val Gln Tyr Val Pro
 305 310 315 320

Thr Trp Ser Lys Glu Met Val Ala Leu Leu Arg Lys Leu Leu Thr Val
 325 330 335
 Asn Pro Glu His Arg Phe Ser Ser Leu Gln Asp Met Gln Thr Ala Pro
 340 345 350
 Ser Leu Ala His Val Leu Trp Asp Asp Leu Ser Glu Lys Lys Val Glu
 355 360 365
 Pro Gly Phe Val Pro Asn Lys Gly Arg Leu His Cys Asp Pro Thr Phe
 370 375 380
 Glu Leu Glu Glu Met Ile Leu Glu Ser Arg Pro Leu His Lys Lys Lys
 385 390 395 400
 Lys Arg Leu Ala Lys Asn Lys Ser Arg Asp Ser Ser Arg Asp Ser Ser
 405 410 415
 Gln Ser Glu Asn Asp Tyr Leu Gln Asp Cys Leu Asp Ala Ile Gln Gln
 420 425 430
 Asp Phe Val Ile Phe Asn Arg Glu Lys Leu Lys Arg Ser Gln Glu Leu
 435 440 445
 Met Ser Glu Pro Pro Pro Gly Pro Glu Thr Ser Asp Met Thr Asp Ser
 450 455 460
 Thr Ala Asp Ser Glu Ala Glu Pro Thr Ala Leu Pro Met Cys Gly Ser
 465 470 475 480
 Ile Cys Pro Ser Ser Gly Ser Ser
 485

<210> 155

<211> 369

<212> PRT

<213> Homo sapiens

<400> 155

Met Tyr Ala Met Lys Tyr Met Asn Lys Gln Gln Cys Ile Glu Arg Asp
 1 5 10 15

Glu Val Arg Asn Val Phe Arg Glu Leu Glu Ile Leu Gln Glu Ile Glu
 20 25 30

His Val Phe Leu Val Asn Leu Trp Tyr Ser Phe Gln Asp Glu Glu Asp

35	40	45																	
Met	Phe	Met	Val	Val	Asp	Leu	Leu	Leu	Gly	Gly	Asp	Leu	Arg	Tyr	His				
50						55					60								
Leu	Gln	Gln	Asn	Val	Gln	Phe	Ser	Glu	Asp	Thr	Val	Arg	Leu	Tyr	Ile				
65					70					75					80				
Cys	Glu	Met	Ala	Leu	Ala	Leu	Asp	Tyr	Leu	Arg	Gly	Gln	His	Ile	Ile				
				85					90					95					
His	Arg	Asp	Val	Lys	Pro	Asp	Asn	Ile	Leu	Leu	Asp	Glu	Arg	Gly	His				
			100					105						110					
Ala	His	Leu	Thr	Asp	Phe	Asn	Ile	Ala	Thr	Ile	Ile	Lys	Asp	Gly	Glu				
		115					120					125							
Arg	Ala	Thr	Ala	Leu	Ala	Gly	Thr	Lys	Pro	Tyr	Met	Ala	Pro	Glu	Ile				
	130					135					140								
Phe	His	Ser	Phe	Val	Asn	Gly	Gly	Thr	Gly	Tyr	Ser	Phe	Glu	Val	Asp				
145					150					155					160				
Trp	Trp	Ser	Val	Gly	Val	Met	Ala	Tyr	Glu	Leu	Leu	Arg	Gly	Trp	Arg				
				165					170					175					
Pro	Tyr	Asp	Ile	His	Ser	Ser	Asn	Ala	Val	Glu	Ser	Leu	Val	Gln	Leu				
			180					185						190					
Phe	Ser	Thr	Val	Ser	Val	Gln	Tyr	Val	Pro	Thr	Trp	Ser	Lys	Glu	Met				
	195						200					205							
Val	Ala	Leu	Leu	Arg	Lys	Leu	Leu	Thr	Val	Asn	Pro	Glu	His	Arg	Leu				
	210					215					220								
Ser	Ser	Leu	Gln	Asp	Val	Gln	Ala	Ala	Pro	Ala	Leu	Ala	Gly	Val	Leu				
225					230					235					240				
Trp	Asp	His	Leu	Ser	Glu	Lys	Arg	Val	Glu	Pro	Gly	Phe	Val	Pro	Asn				
				245					250					255					
Lys	Gly	Arg	Leu	His	Cys	Asp	Pro	Thr	Phe	Glu	Leu	Glu	Glu	Met	Ile				
			260					265						270					
Leu	Glu	Ser	Arg	Pro	Leu	His	Lys	Lys	Lys	Lys	Arg	Leu	Ala	Lys	Asn				
	275						280					285							
Lys	Ser	Arg	Asp	Asn	Ser	Arg	Asp	Ser	Ser	Gln	Ser	Glu	Asn	Asp	Tyr				

Arg Ala Thr Ala Leu Ala Gly Thr Lys Pro Tyr Met Ala Pro Glu Ile
 130 135 140

Phe His Ser Phe Val Asn Gly Gly Thr Gly Tyr Ser Phe Glu Val Asp
 145 150 155 160

Trp Trp Ser Leu Gly Val Met Ala Tyr Glu Leu Leu Arg Gly Trp Arg
 165 170 175

Pro Tyr Asp Ile His Ser Ser Asn Ala Val Glu Ser Leu Val Gln Leu
 180 185 190

Phe Ser Thr Val Ser Val Gln Tyr Val Pro Thr Trp Ser Arg Glu Met
 195 200 205

Val Ala Leu Leu Arg Lys Leu Leu Thr Val Asn Pro Glu His Arg Phe
 210 215 220

Ser Ser Leu Gln Asp Val Gln Ala Ala Pro Ala Leu Ala Gly Val Leu
 225 230 235 240

Trp Gly His Leu Ser Glu Lys Arg Val Glu Pro Asp Phe Val Pro Asn
 245 250 255

Lys Gly Arg Leu His Cys Asp Pro Thr Phe Glu Leu Glu Glu Met Ile
 260 265 270

Leu Glu Ser Arg Pro Leu His Lys Lys Lys Lys Arg Leu Ala Lys Asn
 275 280 285

Lys Ser Arg Asp Asn Ser Arg Asp Ser Ser Gln Ser Glu Asn Asp Tyr
 290 295 300

Leu Gln Asp Cys Leu Asp Ala Ile Gln Gln Asp Phe Val Ile Phe Asn
 305 310 315 320

Arg Glu Lys Leu Lys Arg Ser Gln Asp Leu Pro Ser Glu Pro Leu Pro
 325 330 335

Ala Pro Glu Pro Arg Asp Ala Ala Glu Pro Val Glu Asp Glu Glu Gln
 340 345 350

Ser Ala Leu Pro Met Cys Gly Pro Ile Cys Pro Ser Ala Gly Ser Gly
 355 360 365

<210> 157
 <211> 414
 <212> PRT
 <213> Homo sapiens

<400> 157

Met	Gly	Gly	Asn	His	Ser	His	Lys	Pro	Pro	Val	Phe	Asp	Glu	Asn	Glu	1	5	10	15
Glu	Val	Asn	Phe	Asp	His	Phe	Gln	Ile	Leu	Arg	Ala	Ile	Gly	Lys	Gly	20	25	30	
Ser	Phe	Gly	Lys	Val	Cys	Ile	Val	Gln	Lys	Arg	Asp	Thr	Lys	Lys	Met	35	40	45	
Tyr	Ala	Met	Lys	Tyr	Met	Asn	Lys	Gln	Lys	Cys	Ile	Glu	Arg	Asp	Glu	50	55	60	
Val	Arg	Asn	Val	Phe	Arg	Glu	Leu	Gln	Ile	Met	Gln	Gly	Leu	Glu	His	65	70	75	80
Pro	Phe	Leu	Val	Asn	Leu	Trp	Tyr	Ser	Phe	Gln	Asp	Glu	Glu	Asp	Met	85	90	95	
Phe	Met	Val	Val	Asp	Leu	Leu	Leu	Gly	Gly	Asp	Leu	Arg	Tyr	His	Leu	100	105	110	
Gln	Gln	Asn	Val	His	Phe	Thr	Glu	Gly	Thr	Val	Lys	Leu	Tyr	Ile	Cys	115	120	125	
Glu	Leu	Ala	Leu	Ala	Leu	Glu	Tyr	Leu	Gln	Arg	Tyr	His	Ile	Ile	His	130	135	140	
Arg	Asp	Ile	Lys	Pro	Asp	Asn	Ile	Leu	Leu	Asp	Glu	His	Gly	His	Val	145	150	155	160
His	Ile	Thr	Asp	Phe	Asn	Ile	Ala	Thr	Val	Val	Lys	Gly	Ala	Glu	Arg	165	170	175	
Ala	Ser	Ser	Met	Ala	Gly	Thr	Lys	Pro	Tyr	Met	Ala	Pro	Glu	Val	Phe	180	185	190	
Gln	Val	Tyr	Met	Asp	Arg	Gly	Pro	Gly	Tyr	Ser	Tyr	Pro	Val	Asp	Trp	195	200	205	
Trp	Ser	Leu	Gly	Ile	Thr	Ala	Tyr	Glu	Leu	Leu	Arg	Gly	Trp	Arg	Pro	210	215	220	

Tyr Glu Ile His Ser Val Thr Pro Ile Asp Glu Ile Leu Asn Met Phe
 225 230 235 240
 Lys Val Glu Arg Val His Tyr Ser Ser Thr Trp Cys Lys Gly Met Val
 245 250 255
 Ala Leu Leu Arg Lys Leu Leu Thr Lys Asp Pro Glu Ser Arg Val Ser
 260 265 270
 Ser Leu His Asp Ile Gln Ser Val Pro Tyr Leu Ala Asp Met Asn Trp
 275 280 285
 Asp Ala Val Phe Lys Lys Ala Leu Met Pro Gly Phe Val Pro Asn Lys
 290 295 300
 Gly Arg Leu Asn Cys Asp Pro Thr Phe Glu Leu Glu Glu Met Ile Leu
 305 310 315 320
 Glu Ser Lys Pro Leu His Lys Lys Lys Lys Arg Leu Ala Lys Asn Arg
 325 330 335
 Ser Arg Asp Gly Thr Lys Asp Ser Cys Pro Leu Asn Gly His Leu Gln
 340 345 350
 His Cys Leu Glu Thr Val Arg Glu Glu Phe Ile Ile Phe Asn Arg Glu
 355 360 365
 Lys Leu Arg Arg Gln Gln Gly Gln Gly Ser Gln Leu Leu Asp Thr Asp
 370 375 380
 Ser Arg Gly Gly Gly Gln Ala Gln Ser Lys Leu Gln Asp Gly Cys Asn
 385 390 395 400
 Asn Asn Leu Leu Thr His Thr Cys Thr Arg Gly Cys Ser Ser
 405 410

<210> 158

<211> 414

<212> PRT

<213> Mus musculus

<400> 158

Met Gly Gly Asn His Ser His Lys Pro Pro Val Phe Asp Glu Asn Glu
 1 5 10 15

Glu Val Asn Phe Asp His Phe Gln Ile Leu Arg Ala Ile Gly Lys Gly

20	25	30
Ser Phe Gly Lys Val Cys Ile Val Gln Lys Arg Asp Thr Lys Lys Met		
35	40	45
Tyr Ala Met Lys Tyr Met Asn Lys Gln Lys Cys Val Glu Arg Asp Glu		
50	55	60
Val Arg Asn Val Phe Arg Glu Leu Gln Ile Met Gln Gly Leu Glu His		
65	70	75
		80
Pro Phe Leu Val Asn Leu Trp Tyr Ser Phe Gln Asp Glu Glu Asp Met		
85	90	95
Phe Met Val Val Asp Leu Leu Leu Gly Gly Asp Leu Arg Tyr His Leu		
100	105	110
Gln Gln Asn Val His Phe Thr Glu Gly Thr Val Lys Leu Tyr Ile Cys		
115	120	125
Glu Leu Ala Leu Ala Leu Glu Tyr Leu Gln Arg Tyr His Ile Ile His		
130	135	140
Arg Asp Ile Lys Pro Asp Asn Ile Leu Leu Asp Glu His Gly His Val		
145	150	155
		160
His Ile Thr Asp Phe Asn Ile Ala Thr Val Leu Lys Gly Ser Glu Lys		
165	170	175
Ala Ser Ser Met Ala Gly Thr Lys Pro Tyr Met Ala Pro Glu Val Phe		
180	185	190
Gln Val Tyr Val Asp Gly Gly Pro Gly Tyr Ser Tyr Pro Val Asp Trp		
195	200	205
Trp Ser Leu Gly Val Thr Ala Tyr Glu Leu Leu Arg Gly Trp Arg Pro		
210	215	220
Tyr Glu Ile His Ser Ala Thr Pro Ile Asp Glu Ile Leu Asn Met Phe		
225	230	235
		240
Lys Val Glu Arg Val His Tyr Ser Ser Thr Trp Cys Glu Gly Met Val		
245	250	255
Ser Leu Leu Lys Lys Leu Leu Thr Lys Asp Pro Glu Ser Arg Leu Ser		
260	265	270
Ser Leu Arg Asp Ile Gln Ser Met Thr Tyr Leu Ala Asp Met Asn Trp		

275 280 285
 Asp Ala Val Phe Glu Lys Ala Leu Met Pro Gly Phe Val Pro Asn Lys
 290 295 300
 Gly Arg Leu Asn Cys Asp Pro Thr Phe Glu Leu Glu Glu Met Ile Leu
 305 310 315 320
 Glu Ser Lys Pro Leu His Lys Lys Lys Lys Arg Leu Ala Lys His Arg
 325 330 335
 Ser Arg Asp Ser Thr Lys Asp Ser Cys Pro Leu Asn Gly His Leu Gln
 340 345 350
 Gln Cys Leu Glu Thr Val Arg Lys Glu Phe Ile Ile Phe Asn Arg Glu
 355 360 365
 Lys Leu Arg Arg Gln Gln Gly His Asp Gly Gln Leu Ser Asp Leu Asp
 370 375 380
 Gly Arg Ile Gly Ser Gln Thr Ser Ser Lys Leu Gln Asp Gly Arg Asn
 385 390 395 400
 Asn Asn Ile Leu Thr His Thr Cys Pro Arg Gly Cys Ser Ser
 405 410

 <210> 159
 <211> 258
 <212> PRT
 <213> Homo sapiens

 <400> 159
 Phe Gln Ile Leu Arg Ala Ile Gly Lys Gly Ser Phe Gly Lys Val Val
 1 5 10 15
 Cys Ile Val Gln Lys Arg Asp Thr Glu Lys Met Tyr Ala Met Lys Tyr
 20 25 30
 Met Asn Lys Gln Gln Cys Ile Glu Arg Asp Glu Val Arg Asn Val Phe
 35 40 45
 Arg Glu Leu Glu Ile Leu Gln Glu Ile Glu His Val Phe Leu Val Asn
 50 55 60
 Leu Trp Tyr Ser Phe Gln Asp Glu Glu Asp Met Phe Met Val Val Asp
 65 70 75 80

Leu Leu Leu Gly Gly Asp Leu Arg Tyr His Leu Gln Gln Asn Val Gln
 85 90 95
 Phe Ser Glu Asp Thr Val Arg Leu Tyr Ile Cys Glu Met Ala Leu Ala
 100 105 110
 Leu Asp Tyr Leu Arg Gly Gln His Ile Ile His Arg Asp Val Lys Pro
 115 120 125
 Asp Asn Ile Leu Leu Asp Glu Arg Gly His Ala His Leu Thr Asp Phe
 130 135 140
 Asn Ile Ala Thr Ile Ile Lys Asp Gly Glu Arg Ala Thr Ala Leu Ala
 145 150 155 160
 Gly Thr Lys Pro Tyr Met Ala Pro Glu Ile Phe His Ser Phe Val Asn
 165 170 175
 Gly Gly Thr Gly Tyr Ser Phe Glu Val Asp Trp Trp Ser Val Gly Val
 180 185 190
 Met Ala Tyr Glu Leu Leu Arg Gly Trp Arg Pro Tyr Asp Ile His Ser
 195 200 205
 Ser Asn Ala Val Glu Ser Leu Val Gln Leu Phe Ser Thr Val Ser Val
 210 215 220
 Gln Tyr Val Pro Thr Trp Ser Lys Glu Met Val Gly Leu Leu Arg Lys
 225 230 235 240
 Val Leu Leu Thr Val Asn Pro Glu His Arg Leu Ser Ser Leu Gln Asp
 245 250 255
 Val Gln

<210> 160

<211> 252

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: S_TKc,
 Serine/Threonine protein kinases domain sequence

<400> 160

Tyr Glu Leu Leu Glu Val Leu Gly Lys Gly Ala Phe Gly Lys Val Tyr

1	5	10	15
Leu Ala Arg Asp Lys Lys Thr Gly Lys Leu Val Ala Ile Lys Val Ile	20	25	30
Lys Lys Glu Lys Leu Lys Lys Lys Lys Arg Glu Arg Ile Leu Arg Glu	35	40	45
Ile Lys Ile Leu Lys Lys Leu Asp His Pro Asn Ile Val Lys Leu Tyr	50	55	60
Asp Val Phe Glu Asp Asp Asp Lys Leu Tyr Leu Val Met Glu Tyr Cys	65	70	75
Glu Gly Gly Asp Leu Phe Asp Leu Leu Lys Lys Arg Gly Arg Leu Ser	85	90	95
Glu Asp Glu Ala Arg Phe Tyr Ala Arg Gln Ile Leu Ser Ala Leu Glu	100	105	110
Tyr Leu His Ser Gln Gly Ile Ile His Arg Asp Leu Lys Pro Glu Asn	115	120	125
Ile Leu Leu Asp Ser Asp Gly His Val Lys Leu Ala Asp Phe Gly Leu	130	135	140
Ala Lys Gln Leu Asp Ser Gly Gly Thr Leu Leu Thr Thr Phe Val Gly	145	150	155
Thr Pro Glu Tyr Met Ala Pro Glu Val Leu Leu Gly Lys Gly Tyr Gly	165	170	175
Lys Ala Val Asp Ile Trp Ser Leu Gly Val Ile Leu Tyr Glu Leu Leu	180	185	190
Thr Gly Lys Pro Pro Phe Pro Gly Asp Asp Gln Leu Leu Ala Leu Phe	195	200	205
Lys Lys Ile Gly Lys Pro Pro Pro Pro Phe Pro Pro Pro Glu Trp Lys	210	215	220
Ile Ser Pro Glu Ala Lys Asp Leu Ile Lys Lys Leu Leu Val Lys Asp	225	230	235
Pro Glu Lys Arg Leu Thr Ala Glu Glu Ala Leu Glu	245	250	

<210> 161
 <211> 255
 <212> PRT
 <213> Homo sapiens

<400> 161
 Phe Gln Ile Leu Arg Ala Ile Gly Lys Gly Ser Phe Gly Lys Val Val
 1 5 10 15
 Cys Ile Val Gln Lys Arg Asp Thr Glu Lys Met Tyr Ala Met Lys Tyr
 20 25 30
 Met Asn Lys Gln Gln Cys Ile Glu Arg Asp Glu Val Arg Asn Val Phe
 35 40 45
 Arg Glu Leu Glu Ile Leu Gln Glu Ile Glu His Val Phe Leu Val Asn
 50 55 60
 Leu Trp Tyr Ser Phe Gln Asp Glu Glu Asp Met Phe Met Val Val Asp
 65 70 75 80
 Leu Leu Leu Gly Gly Asp Leu Arg Tyr His Leu Gln Gln Asn Val Gln
 85 90 95
 Phe Ser Glu Asp Thr Val Arg Leu Tyr Ile Cys Glu Met Ala Leu Ala
 100 105 110
 Leu Asp Tyr Leu Arg Gly Gln His Ile Ile His Arg Asp Val Lys Pro
 115 120 125
 Asp Asn Ile Leu Leu Asp Glu Arg Gly His Ala His Leu Thr Asp Phe
 130 135 140
 Asn Ile Ala Thr Ile Ile Lys Asp Gly Glu Arg Ala Thr Ala Leu Ala
 145 150 155 160
 Gly Thr Lys Pro Tyr Met Ala Pro Glu Ile Phe His Ser Phe Val Asn
 165 170 175
 Gly Gly Thr Gly Tyr Ser Phe Glu Val Asp Trp Trp Ser Val Gly Val
 180 185 190
 Met Ala Tyr Glu Leu Leu Arg Gly Trp Arg Pro Tyr Asp Ile His Ser
 195 200 205
 Ser Asn Ala Val Glu Ser Leu Val Gln Leu Phe Ser Thr Val Ser Val
 210 215 220

Gln Tyr Val Pro Thr Trp Ser Lys Glu Met Val Gly Leu Leu Arg Lys
 225 230 235 240

Val Leu Leu Thr Val Asn Pro Glu His Arg Leu Ser Ser Leu Gln
 245 250 255

<210> 162

<211> 249

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: pkinase,
 Protein kinase domain

<400> 162

Tyr Glu Leu Gly Glu Lys Leu Gly Ser Gly Ala Phe Gly Lys Val Tyr
 1 5 10 15

Lys Gly Lys His Lys Asp Thr Gly Glu Ile Val Ala Ile Lys Ile Leu
 20 25 30

Lys Lys Arg Ser Leu Ser Glu Lys Lys Lys Arg Phe Leu Arg Glu Ile
 35 40 45

Gln Ile Leu Arg Arg Leu Ser His Pro Asn Ile Val Arg Leu Leu Gly
 50 55 60

Val Phe Glu Glu Asp Asp His Leu Tyr Leu Val Met Glu Tyr Met Glu
 65 70 75 80

Gly Gly Asp Leu Phe Asp Tyr Leu Arg Arg Asn Gly Leu Leu Leu Ser
 85 90 95

Glu Lys Glu Ala Lys Lys Ile Ala Leu Gln Ile Leu Arg Gly Leu Glu
 100 105 110

Tyr Leu His Ser Arg Gly Ile Val His Arg Asp Leu Lys Pro Glu Asn
 115 120 125

Ile Leu Leu Asp Glu Asn Gly Thr Val Lys Ile Ala Asp Phe Gly Leu
 130 135 140

Ala Arg Lys Leu Glu Ser Ser Ser Tyr Glu Lys Leu Thr Thr Phe Val
 145 150 155 160

Gly Thr Pro Glu Tyr Met Ala Pro Glu Val Leu Glu Gly Arg Gly Tyr

165 170 175
 Ser Ser Lys Val Asp Val Trp Ser Leu Gly Val Ile Leu Tyr Glu Leu
 180 185 190
 Leu Thr Gly Lys Leu Pro Phe Pro Gly Ile Asp Pro Leu Glu Glu Leu
 195 200 205
 Phe Arg Ile Lys Glu Arg Pro Arg Leu Arg Leu Pro Leu Pro Pro Asn
 210 215 220
 Cys Ser Glu Glu Leu Lys Asp Leu Ile Lys Lys Cys Leu Asn Lys Asp
 225 230 235 240
 Pro Glu Lys Arg Pro Thr Ala Lys Glu
 245

 <210> 163
 <211> 215
 <212> PRT
 <213> Homo sapiens

 <400> 163
 Ile Leu Arg Ala Ile Gly Lys Gly Ser Phe Gly Lys Val Val Cys Ile
 1 5 10 15
 Val Gln Lys Arg Asp Thr Glu Lys Met Tyr Ala Met Lys Tyr Met Asn
 20 25 30
 Lys Gln Gln Cys Ile Glu Arg Asp Glu Val Arg Asn Val Phe Arg Glu
 35 40 45
 Leu Glu Ile Leu Gln Glu Ile Glu His Val Phe Leu Val Asn Leu Trp
 50 55 60
 Tyr Ser Phe Gln Asp Glu Glu Asp Met Phe Met Val Val Asp Leu Leu
 65 70 75 80
 Leu Gly Gly Asp Leu Arg Tyr His Leu Gln Gln Asn Val Gln Phe Ser
 85 90 95
 Glu Asp Thr Val Arg Leu Tyr Ile Cys Glu Met Ala Leu Ala Leu Asp
 100 105 110
 Tyr Leu Arg Gly Gln His Ile Ile His Arg Asp Val Lys Pro Asp Asn
 115 120 125

Ile Leu Leu Asp Glu Arg Gly His Ala His Leu Thr Asp Phe Asn Ile
130 135 140

Ala Thr Ile Ile Lys Asp Gly Glu Arg Ala Thr Ala Leu Ala Gly Thr
145 150 155 160

Lys Pro Tyr Met Ala Pro Glu Ile Phe His Ser Phe Val Asn Gly Gly
165 170 175

Thr Gly Tyr Ser Phe Glu Val Asp Trp Trp Ser Val Gly Val Met Ala
180 185 190

Tyr Glu Leu Leu Arg Gly Trp Arg Pro Tyr Asp Ile His Ser Ser Asn
195 200 205

Ala Val Glu Ser Leu Val Gln
210 215

<210> 164

<211> 216

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: TyrKc,
Tyrosine kinase domain

<400> 164

Leu Gly Lys Lys Leu Gly Glu Gly Ala Phe Gly Glu Val Tyr Lys Gly
1 5 10 15

Thr Leu Lys Gly Lys Gly Gly Val Glu Val Glu Val Ala Val Lys Thr
20 25 30

Leu Lys Glu Asp Ala Ser Glu Gln Gln Ile Glu Glu Phe Leu Arg Glu
35 40 45

Ala Arg Leu Met Arg Lys Leu Asp His Pro Asn Ile Val Lys Leu Leu
50 55 60

Gly Val Cys Thr Glu Glu Glu Pro Leu Met Ile Val Met Glu Tyr Met
65 70 75 80

Glu Gly Gly Asp Leu Leu Asp Tyr Leu Arg Lys Asn Arg Pro Lys Glu
85 90 95

Leu Ser Leu Ser Asp Leu Leu Ser Phe Ala Leu Gln Ile Ala Arg Gly

100	105	110
Met Glu Tyr Leu Glu Ser Lys Asn Phe Val His Arg Asp Leu Ala Ala		
115	120	125
Arg Asn Cys Leu Val Gly Glu Asn Lys Thr Val Lys Ile Ala Asp Phe		
130	135	140
Gly Leu Ala Arg Asp Leu Tyr Asp Asp Asp Tyr Tyr Arg Lys Lys Lys		
145	150	155
		160
Ser Pro Arg Leu Pro Ile Arg Trp Met Ala Pro Glu Ser Leu Lys Asp		
	165	170
		175
Gly Lys Phe Thr Ser Lys Ser Asp Val Trp Ser Phe Gly Val Leu Leu		
	180	185
		190
Trp Glu Ile Phe Thr Leu Gly Glu Ser Pro Tyr Pro Gly Met Ser Asn		
	195	200
		205
Glu Glu Val Leu Glu Tyr Leu Lys		
	210	215

<210> 165
 <211> 187
 <212> PRT
 <213> Homo sapiens

<400> 165
 Met Gln Cys Leu Leu Leu Thr Leu Ser Met Ala Leu Val Cys Ala Ile
 1 5 10 15
 Gln Ala Arg Asp Ile Pro Gln Thr Lys Gln Asp Val Glu Leu Pro Lys
 20 25 30
 Leu Ala Gly Thr Trp Tyr Ser Met Ala Met Val Ala Ser Asp Phe Ser
 35 40 45
 Leu Leu Glu Thr Val Glu Ala Pro Leu Arg Val Asn Ile Thr Ser Leu
 50 55 60
 Trp Pro Thr Pro Glu Gly Asn Leu Glu Ile Ile Leu His Arg Trp Glu
 65 70 75 80
 His His Arg Cys Val Glu Arg Thr Val Leu Ala Gln Lys Thr Glu Asp
 85 90 95

Pro Ala Val Phe Met Val Asp Arg Arg Ile Cys Arg Ala Ala Val Val
100 105 110

Ser Gly Gln Gln Pro Ser Gln Arg Trp Arg Leu Ser Val Lys Glu Arg
115 120 125

Ser Arg Lys Glu Gly Gly Arg Leu Pro Arg Ser Arg Asp Lys Lys Asp
130 135 140

Leu Cys Val Gly His Arg Leu Asp Asp Arg Ser Tyr Val Phe Phe Cys
145 150 155 160

Met Gly Thr Thr Thr Pro Ser Ala Asp His His Thr Met Cys Gln Tyr
165 170 175

Leu Gly Met Thr Gln Gly Pro Pro Gly Phe Ile
180 185

<210> 166

<211> 186

<212> PRT

<213> PAPIO CYNOCEPHALUS

<400> 166

Met Gln Cys Leu Leu Leu Thr Leu Gly Val Ala Leu Ile Cys Gly Val
1 5 10 15

Trp Ala Ile Asn Ser Pro Gln Thr Met Gln Asp Val Glu Leu Pro Lys
20 25 30

Leu Ala Gly Thr Trp His Ser Met Ala Met Ala Ala Ser Asp Phe Ser
35 40 45

Leu Leu Glu Thr Lys Glu Ala Pro Leu Arg Ile Tyr Ile Ser Ser Leu
50 55 60

Gln Pro Thr Pro Glu Gly Asn Leu Glu Ile Val Leu Arg Arg Trp Ser
65 70 75 80

Gln Lys Gln Ser Pro Phe Arg Asp Ser Asn Gln Cys Ile Glu Glu Lys
85 90 95

Ile Ile Ala Glu Lys Thr Glu Asn Pro Ile Glu Phe Lys Ile Asn Tyr
100 105 110

Leu Asp Glu Asn Arg Ile Tyr Leu Phe Asn Thr Asp Gly Ser Lys Tyr
115 120 125

Leu Phe Leu Cys Leu Glu Ser Thr Arg Arg Gln Asn Leu Ala Cys Gln
 130 135 140

Tyr Leu Ala Arg Thr Leu Glu Val Asp Asp Lys Val Met Ala Glu Phe
 145 150 155 160

Ile Ser Phe Leu Lys Thr Leu Pro Val His Met Gln Ile Phe Leu Asp
 165 170 175

Met Thr Gln Ala Glu Glu Gln Cys Arg Val
 180 185

<210> 167

<211> 180

<212> PRT

<213> Homo sapiens

<400> 167

Met Leu Cys Leu Leu Leu Thr Leu Gly Val Ala Leu Val Cys Gly Val
 1 5 10 15

Pro Ala Met Asp Ile Pro Gln Thr Lys Gln Asp Leu Glu Leu Pro Lys
 20 25 30

Leu Ala Gly Thr Trp His Ser Met Ala Met Ala Thr Asn Asn Ile Ser
 35 40 45

Leu Met Ala Thr Leu Lys Ala Pro Leu Arg Val His Ile Thr Ser Leu
 50 55 60

Leu Pro Thr Pro Glu Asp Asn Leu Glu Ile Val Leu His Arg Trp Glu
 65 70 75 80

Asn Asn Ser Cys Val Glu Lys Lys Val Leu Gly Glu Lys Thr Glu Asn
 85 90 95

Pro Lys Lys Phe Lys Ile Asn Tyr Thr Val Ala Asn Glu Ala Thr Leu
 100 105 110

Leu Asp Thr Asp Tyr Asp Asn Phe Leu Phe Leu Cys Leu Gln Asp Thr
 115 120 125

Thr Thr Pro Ile Gln Ser Met Met Cys Gln Tyr Leu Ala Arg Val Leu
 130 135 140

Val Glu Asp Asp Glu Ile Met Gln Gly Phe Ile Arg Ala Phe Arg Pro

145 150 155 160
 Leu Pro Arg His Leu Trp Tyr Leu Leu Asp Leu Lys Gln Met Glu Glu
 165 170 175
 Pro Cys Arg Phe
 180

 <210> 168
 <211> 188
 <212> PRT
 <213> Homo sapiens

 <400> 168
 Ser Glu Pro Pro Thr Ala Ala Ala Met Leu Cys Leu Leu Leu Thr Leu
 1 5 10 15
 Gly Val Ala Leu Val Cys Gly Val Pro Ala Met Asp Ile Pro Gln Thr
 20 25 30
 Lys Gln Asp Leu Glu Leu Pro Lys Leu Ala Gly Thr Trp His Ser Met
 35 40 45
 Ala Met Ala Thr Asn Asn Ile Ser Leu Met Ala Thr Leu Lys Ala Pro
 50 55 60
 Leu Arg Val His Ile Thr Ser Leu Leu Pro Thr Pro Glu Asp Asn Leu
 65 70 75 80
 Glu Ile Val Leu His Arg Trp Glu Asn Asn Ser Cys Val Glu Lys Lys
 85 90 95
 Val Leu Gly Glu Lys Thr Glu Asn Pro Lys Lys Phe Lys Ile Asn Tyr
 100 105 110
 Thr Val Ala Asn Glu Ala Thr Leu Leu Asp Thr Asp Tyr Asp Asn Phe
 115 120 125
 Leu Phe Leu Cys Leu Gln Asp Thr Thr Thr Pro Ile Gln Ser Met Met
 130 135 140
 Cys Gln Tyr Leu Ala Arg Val Leu Val Glu Asp Asp Glu Ile Met Gln
 145 150 155 160
 Gly Phe Ile Arg Ala Phe Arg Pro Leu Pro Arg His Leu Trp Tyr Leu
 165 170 175

Leu Asp Leu Lys Gln Met Glu Glu Pro Cys Arg Phe
 180 185

<210> 169
 <211> 163
 <212> PRT
 <213> Felis catus

<400> 169
 Ala Thr Leu Pro Pro Thr Met Glu Asp Leu Asp Ile Arg Gln Val Ala
 1 5 10 15
 Gly Thr Trp His Ser Met Ala Met Ala Ala Ser Asp Ile Ser Leu Leu
 20 25 30
 Asp Ser Glu Thr Ala Pro Leu Arg Val Tyr Val Gln Glu Leu Arg Pro
 35 40 45
 Thr Pro Arg Asp Asn Leu Glu Ile Ile Leu Arg Lys Arg Glu Asn His
 50 55 60
 Ala Cys Ile Glu Gly Asn Ile Met Ala Gln Arg Thr Glu Asp Pro Ala
 65 70 75 80
 Val Phe Met Val Asp Tyr Gln Gly Glu Lys Lys Ile Ser Val Leu Asp
 85 90 95
 Thr Asp Tyr Thr His Tyr Met Phe Phe Cys Met Glu Ala Pro Ala Pro
 100 105 110
 Gly Thr Glu Asn Gly Met Met Cys Gln Tyr Leu Ala Arg Thr Leu Lys
 115 120 125
 Ala Asp Asn Glu Val Met Glu Lys Phe Asp Arg Ala Leu Gln Thr Leu
 130 135 140
 Pro Val His Ile Arg Ile Ile Leu Asp Leu Thr Gln Gly Lys Glu Gln
 145 150 155 160
 Cys Arg Val

<210> 170
 <211> 145
 <212> PRT
 <213> Homo sapiens

<400> 170

Lys Phe Ala Gly Lys Trp Tyr Leu Val Ala Ser Ala Asn Phe Asp Pro
1 5 10 15

Glu Leu Lys Glu Glu Leu Gly Val Leu Glu Ala Thr Arg Lys Glu Ile
20 25 30

Thr Pro Leu Lys Glu Gly Asn Leu Glu Ile Val Phe Asp Gly Asp Lys
35 40 45

Asn Gly Ile Cys Glu Glu Thr Phe Gly Lys Leu Glu Lys Thr Lys Lys
50 55 60

Leu Gly Val Glu Phe Asp Tyr Tyr Thr Gly Asp Asn Arg Phe Val Val
65 70 75 80

Leu Asp Thr Asp Tyr Asp Asn Tyr Leu Leu Val Cys Val Gln Lys Gly
85 90 95

Asp Gly Asn Glu Thr Ser Arg Thr Ala Glu Leu Tyr Gly Arg Thr Pro
100 105 110

Glu Leu Ser Pro Glu Ala Leu Glu Leu Phe Glu Thr Ala Thr Lys Glu
115 120 125

Leu Gly Ile Pro Glu Asp Asn Val Val Cys Thr Arg Gln Thr Glu Arg
130 135 140

Cys
145

<210> 171

<211> 145

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: lipocalin
domain sequence

<400> 171

Lys Phe Ala Gly Lys Trp Tyr Leu Val Ala Ser Ala Asn Phe Asp Pro
1 5 10 15

Glu Leu Lys Glu Glu Leu Gly Val Leu Glu Ala Thr Arg Lys Glu Ile
20 25 30

Thr Pro Leu Lys Glu Gly Asn Leu Glu Ile Val Phe Asp Gly Asp Lys
 35 40 45

Asn Gly Ile Cys Glu Glu Thr Phe Gly Lys Leu Glu Lys Thr Lys Lys
 50 55 60

Leu Gly Val Glu Phe Asp Tyr Tyr Thr Gly Asp Asn Arg Phe Val Val
 65 70 75 80

Leu Asp Thr Asp Tyr Asp Asn Tyr Leu Leu Val Cys Val Gln Lys Gly
 85 90 95

Asp Gly Asn Glu Thr Ser Arg Thr Ala Glu Leu Tyr Gly Arg Thr Pro
 100 105 110

Glu Leu Ser Pro Glu Ala Leu Glu Leu Phe Glu Thr Ala Thr Lys Glu
 115 120 125

Leu Gly Ile Pro Glu Asp Asn Val Val Cys Thr Arg Gln Thr Glu Arg
 130 135 140

Cys
 145

<210> 172

<211> 1327

<212> PRT

<213> Mus musculus

<400> 172

Met Glu Ala Pro Leu Gln Thr Gly Met Val Leu Gly Val Met Ile Gly
 1 5 10 15

Ala Gly Val Ala Val Leu Val Thr Ala Val Leu Ile Leu Leu Val Val
 20 25 30

Arg Arg Leu Arg Val Gln Lys Thr Pro Ala Pro Glu Gly Pro Arg Tyr
 35 40 45

Arg Phe Arg Lys Arg Asp Lys Val Leu Phe Tyr Gly Arg Lys Ile Met
 50 55 60

Arg Lys Val Ser Gln Ser Thr Ser Ser Leu Val Asp Thr Ser Val Ser
 65 70 75 80

Thr Thr Ser Arg Pro Arg Met Lys Lys Lys Leu Lys Met Leu Asn Ile

85	90	95
Ala Lys Lys Ile Leu Arg Ile Gln Lys Glu Thr Pro Thr Leu Gln Arg		
100	105	110
Lys Glu Pro Pro Pro Ser Val Leu Glu Ala Asp Leu Thr Glu Gly Asp		
115	120	125
Leu Ala Asn Ser His Leu Pro Ser Glu Val Leu Tyr Met Leu Lys Asn		
130	135	140
Val Arg Val Leu Gly His Phe Glu Lys Pro Leu Phe Leu Glu Leu Cys		
145	150	155
		160
Arg His Met Val Phe Gln Arg Leu Gly Gln Gly Asp Tyr Val Phe Arg		
165	170	175
Pro Gly Gln Pro Asp Ala Ser Ile Tyr Val Val Gln Asp Gly Leu Leu		
180	185	190
Glu Leu Cys Leu Pro Gly Pro Asp Gly Lys Glu Cys Val Val Lys Lys		
195	200	205
Val Val Pro Gly Asp Ser Val Asn Ser Leu Leu Ser Ile Leu Asp Val		
210	215	220
Ile Thr Gly His Gln His Pro Gln Arg Thr Val Ser Ala Arg Ala Ala		
225	230	235
		240
Arg Asp Ser Thr Val Leu Arg Leu Pro Val Glu Ala Phe Ser Ala Val		
245	250	255
Phe Thr Lys Tyr Pro Glu Ser Leu Val Arg Val Val Gln Ile Ile Met		
260	265	270
Val Arg Leu Gln Arg Val Thr Phe Leu Ala Leu His Asn Tyr Leu Gly		
275	280	285
Leu Thr Asn Glu Leu Phe Ser His Glu Ile Gln Pro Leu Arg Leu Phe		
290	295	300
Pro Ser Pro Gly Leu Pro Thr Arg Thr Ser Pro Val Arg Gly Ser Lys		
305	310	315
		320
Arg Val Val Ser Thr Ser Gly Thr Glu Asp Thr Ser Lys Glu Thr Ser		
325	330	335
Gly Arg Pro Leu Asp Ser Ile Gly Ala Pro Leu Pro Gly Pro Ala Gly		

340 345 350
 Asp Pro Val Lys Pro Thr Ser Leu Glu Ala Pro Pro Ala Pro Leu Leu
 355 360 365
 Ser Arg Cys Ile Ser Met Pro Val Asp Ile Ser Gly Leu Gln Gly Gly
 370 375 380
 Pro Arg Ser Asp Phe Asp Met Ala Tyr Glu Arg Gly Arg Ile Ser Val
 385 390 395 400
 Ser Leu Gln Glu Glu Ala Ser Gly Gly Pro Gln Thr Ala Ser Pro Arg
 405 410 415
 Thr Pro Thr Gln Glu Leu Arg Glu Gln Pro Ala Gly Ala Cys Glu Tyr
 420 425 430
 Ser Tyr Cys Glu Asp Glu Ser Ala Thr Gly Gly Cys Pro Phe Gly Pro
 435 440 445
 Tyr Gln Gly Arg Gln Thr Ser Ser Ile Phe Glu Ala Ala Lys Arg Glu
 450 455 460
 Leu Ala Lys Leu Met Arg Ile Glu Asp Pro Ser Leu Leu Asn Ser Arg
 465 470 475 480
 Val Leu Leu His His Ala Lys Ala Gly Thr Ile Ile Ala Arg Gln Gly
 485 490 495
 Asp Gln Asp Val Ser Leu His Phe Val Leu Trp Gly Cys Leu His Val
 500 505 510
 Tyr Gln Arg Met Ile Asp Lys Ala Glu Glu Val Cys Leu Phe Val Ala
 515 520 525
 Gln Pro Gly Glu Leu Val Gly Gln Leu Ala Val Leu Thr Gly Glu Pro
 530 535 540
 Leu Ile Phe Thr Leu Arg Ala Gln Arg Asp Cys Thr Phe Leu Arg Ile
 545 550 555 560
 Ser Lys Ser His Phe Tyr Glu Ile Met Arg Ala Gln Pro Ser Val Val
 565 570 575
 Leu Ser Ala Ala His Thr Val Ala Ala Arg Met Ser Pro Phe Val Arg
 580 585 590
 Gln Met Asp Phe Ala Ile Asp Trp Thr Ala Val Glu Ala Gly Arg Ala

595		600		605
Leu Tyr Arg Gln Gly Asp Arg Ser Asp Cys Thr Tyr Ile Val Leu Asn				
610		615		620
Gly Arg Leu Arg Ser Val Ile Gln Arg Gly Ser Gly Lys Lys Glu Leu				
625		630		635
Val Gly Glu Tyr Gly Arg Gly Asp Leu Ile Gly Val Val Glu Ala Leu				
		645		650
				655
Thr Arg Gln Pro Arg Ala Thr Thr Val His Ala Val Arg Asp Thr Glu				
		660		665
				670
Leu Ala Lys Leu Pro Glu Gly Thr Leu Gly His Ile Lys Arg Arg Tyr				
		675		680
				685
Pro Gln Val Val Thr Arg Leu Ile His Leu Leu Ser Gln Lys Ile Leu				
		690		695
				700
Gly Asn Leu Gln Gln Leu Gln Gly Pro Phe Pro Gly Ser Gly Leu Ser				
705		710		715
				720
Val Pro Gln His Ser Glu Leu Thr Asn Pro Ala Ser Asn Leu Ser Thr				
		725		730
				735
Val Ala Ile Leu Pro Val Cys Ala Glu Val Pro Met Met Ala Phe Thr				
		740		745
				750
Leu Glu Leu Gln His Ala Leu Gln Ala Ile Gly Pro Thr Leu Leu Leu				
		755		760
				765
Asn Ser Asp Val Ile Arg Ala Leu Leu Gly Ala Ser Ala Leu Asp Ser				
		770		775
				780
Ile Gln Glu Phe Arg Leu Ser Gly Trp Leu Ala Gln Gln Glu Asp Ala				
785		790		795
				800
His Arg Ile Val Leu Tyr Gln Thr Asp Thr Ser Leu Thr Pro Trp Thr				
		805		810
				815
Val Arg Cys Leu Arg Gln Ala Asp Cys Ile Leu Ile Val Gly Leu Gly				
		820		825
				830
Asp Gln Glu Pro Thr Val Gly Gln Leu Glu Gln Met Leu Glu Asn Thr				
		835		840
				845
Ala Val Arg Ala Leu Lys Gln Leu Val Leu Leu His Arg Glu Glu Gly				

850		855		860
Pro Gly Pro Thr Arg Thr Val Glu Trp Leu Asn Met Arg Ser Trp Cys				
865		870		880
Ser Gly His Leu His Leu Arg Cys Pro Arg Arg Leu Phe Ser Arg Arg				
	885		890	895
Ser Pro Ala Lys Leu His Glu Leu Tyr Glu Lys Val Phe Ser Arg Arg				
	900		905	910
Ala Asp Arg His Ser Asp Phe Ser Arg Leu Ala Arg Val Leu Thr Gly				
	915		920	925
Asn Thr Ile Ala Leu Val Leu Gly Gly Gly Gly Ala Arg Gly Cys Ser				
	930		935	940
His Ile Gly Val Leu Lys Ala Leu Glu Glu Ala Gly Val Pro Val Asp				
	945		950	955
				960
Leu Val Gly Gly Thr Ser Ile Gly Ser Phe Ile Gly Ala Leu Tyr Ala				
	965		970	975
Glu Glu Arg Ser Ala Ser Arg Thr Lys Gln Arg Ala Arg Glu Trp Ala				
	980		985	990
Lys Ser Met Thr Ser Val Leu Glu Pro Val Leu Asp Leu Thr Tyr Pro				
	995		1000	1005
Val Thr Ser Met Phe Thr Gly Ser Ala Phe Asn Arg Ser Ile His Arg				
	1010		1015	1020
Val Phe Gln Asp Lys Gln Ile Glu Asp Leu Trp Leu Pro Tyr Phe Asn				
	1025		1030	1035
				1040
Val Thr Thr Asp Ile Thr Ala Ser Ala Met Arg Val His Lys Asp Gly				
	1045		1050	1055
Ser Leu Trp Arg Tyr Val Arg Ala Ser Met Thr Leu Ser Gly Tyr Leu				
	1060		1065	1070
Pro Pro Leu Cys Asp Pro Lys Asp Gly His Leu Leu Met Asp Gly Gly				
	1075		1080	1085
Tyr Ile Asn Asn Leu Pro Ala Asp Ile Ala Arg Ser Met Gly Ala Lys				
	1090		1095	1100
Thr Val Ile Ala Ile Asp Val Gly Ser Gln Asp Glu Thr Asp Leu Ser				

1105	1110	1115	1120
Thr Tyr Gly Asp Ser Leu Ser Gly Trp Trp Leu Leu Trp Lys Arg Leu			
1125	1130	1135	
Asn Pro Trp Ala Asp Lys Val Lys Val Pro Asp Met Ala Glu Ile Gln			
1140	1145	1150	
Ser Arg Leu Ala Tyr Val Ser Cys Val Arg Gln Leu Glu Val Val Lys			
1155	1160	1165	
Ser Ser Ser Tyr Cys Glu Tyr Leu Arg Pro Ser Ile Asp Cys Phe Lys			
1170	1175	1180	
Thr Met Asp Phe Gly Lys Phe Asp Gln Ile Tyr Asp Val Gly Tyr Gln			
1185	1190	1195	1200
Tyr Gly Lys Ala Val Phe Gly Gly Trp Thr Arg Gly Glu Val Ile Glu			
1205	1210	1215	
Lys Met Leu Thr Asp Arg Arg Ser Thr Asp Leu Asn Glu Ser Arg Arg			
1220	1225	1230	
Ala Asp Ile Leu Ala Phe Pro Ser Ser Gly Phe Thr Asp Leu Ala Glu			
1235	1240	1245	
Ile Val Ser Arg Ile Glu Pro Pro Thr Ser Tyr Val Ser Asp Gly Cys			
1250	1255	1260	
Ala Asp Gly Glu Glu Ser Asp Cys Leu Thr Glu Tyr Glu Glu Asp Ala			
1265	1270	1275	1280
Gly Pro Asp Cys Ser Arg Asp Glu Gly Gly Ser Pro Glu Gly Ala Ser			
1285	1290	1295	
Pro Ser Thr Ala Ser Glu Val Glu Glu Glu Lys Ser Thr Leu Arg Gln			
1300	1305	1310	
Arg Arg Phe Leu Pro Gln Glu Thr Pro Ser Ser Val Ala Asp Ala			
1315	1320	1325	

<210> 173

<211> 702

<212> PRT

<213> Homo sapiens

<400> 173

Met Leu Ser Gly Arg Leu Arg Ser Val Ile Arg Lys Asp Asp Gly Lys
 1 5 10 15
 Lys Arg Leu Ala Gly Glu Tyr Gly Arg Gly Asp Leu Val Gly Val Val
 20 25 30
 Glu Thr Leu Thr His Gln Ala Arg Ala Thr Thr Val His Ala Val Arg
 35 40 45
 Asp Ser Glu Leu Ala Lys Leu Pro Ala Gly Ala Leu Thr Ser Ile Lys
 50 55 60
 Arg Arg Tyr Pro Gln Val Val Thr Arg Leu Ile His Leu Leu Gly Glu
 65 70 75 80
 Lys Ile Leu Gly Ser Leu Gln Gln Gly Pro Val Thr Gly His Gln Leu
 85 90 95
 Gly Leu Pro Thr Glu Gly Ser Lys Trp Asp Leu Gly Asn Pro Ala Val
 100 105 110
 Asn Leu Ser Thr Val Ala Val Met Pro Val Ser Glu Glu Val Pro Leu
 115 120 125
 Thr Ala Phe Ala Leu Glu Leu Glu His Ala Leu Ser Ala Ile Gly Pro
 130 135 140
 Thr Leu Leu Leu Thr Ser Asp Asn Ile Lys Arg Arg Leu Gly Ser Ala
 145 150 155 160
 Ala Leu Asp Ser Val His Glu Tyr Arg Leu Ser Ser Trp Leu Gly Gln
 165 170 175
 Gln Glu Asp Thr His Arg Ile Val Leu Tyr Gln Ala Asp Gly Thr Leu
 180 185 190
 Thr Pro Trp Thr Gln Arg Cys Val Arg Gln Ala Asp Cys Ile Leu Ile
 195 200 205
 Val Gly Leu Gly Asp Gln Glu Pro Thr Val Gly Glu Leu Glu Arg Met
 210 215 220
 Leu Glu Ser Thr Ala Val Arg Ala Gln Lys Gln Leu Ile Leu Leu His
 225 230 235 240
 Arg Glu Glu Gly Pro Ala Pro Ala Arg Thr Val Glu Trp Leu Asn Met
 245 250 255

Arg Ser Ser Cys Ser Gly His Leu His Leu Cys Cys Pro Arg Arg Val
 260 265 270

Phe Ser Arg Arg Ser Leu Pro Lys Leu Val Glu Met Tyr Lys His Val
 275 280 285

Phe Gln Arg Pro Pro Asp Arg His Ser Asp Phe Ser Arg Leu Ala Arg
 290 295 300

Val Leu Thr Gly Asn Ala Ile Ala Leu Val Leu Gly Gly Gly Gly Ala
 305 310 315 320

Arg Gly Cys Ala Gln Val Gly Val Leu Lys Ala Leu Ala Glu Cys Gly
 325 330 335

Ile Pro Val Asp Met Val Gly Gly Thr Ser Ile Gly Ala Phe Val Gly
 340 345 350

Ala Leu Tyr Ser Glu Glu Arg Asn Tyr Ser Gln Met Arg Ile Arg Ala
 355 360 365

Lys Gln Trp Ala Glu Gly Met Thr Ser Leu Met Lys Ala Ala Leu Asp
 370 375 380

Leu Thr Tyr Pro Ile Thr Ser Met Phe Ser Gly Ala Gly Phe Asn Ser
 385 390 395 400

Ser Ile Phe Ser Val Phe Lys Asp Gln Gln Ile Glu Asp Leu Trp Ile
 405 410 415

Pro Tyr Phe Ala Ile Thr Thr Asp Ile Thr Ala Ser Ala Met Arg Val
 420 425 430

His Thr Asp Gly Ser Leu Trp Arg Tyr Val Arg Ala Ser Met Ser Leu
 435 440 445

Ser Gly Tyr Met Pro Pro Leu Cys Asp Pro Lys Asp Gly His Leu Leu
 450 455 460

Met Asp Gly Gly Tyr Ile Asn Asn Leu Pro Ala Asp Val Ala Arg Ser
 465 470 475 480

Met Gly Ala Lys Val Val Ile Ala Ile Asp Val Gly Ser Arg Asp Glu
 485 490 495

Thr Asp Leu Thr Asn Tyr Gly Asp Ala Leu Ser Gly Trp Trp Leu Leu
 500 505 510

Trp Lys Arg Trp Asn Pro Leu Ala Thr Lys Val Lys Val Leu Asn Met
515 520 525

Ala Glu Ile Gln Thr Arg Leu Ala Tyr Val Cys Cys Val Arg Gln Leu
530 535 540

Glu Val Val Lys Ser Ser Asp Tyr Cys Glu Tyr Leu Arg Pro Pro Ile
545 550 555 560

Asp Ser Tyr Ser Thr Leu Asp Phe Gly Lys Phe Asn Glu Ile Cys Glu
565 570 575

Val Gly Tyr Gln His Gly Arg Thr Val Phe Asp Ile Trp Gly Arg Ser
580 585 590

Gly Val Leu Glu Lys Met Leu Arg Asp Gln Gln Gly Pro Ser Lys Lys
595 600 605

Pro Ala Ser Ala Val Leu Thr Cys Pro Asn Ala Ser Phe Thr Asp Leu
610 615 620

Ala Glu Ile Val Ser Arg Ile Glu Pro Ala Lys Pro Ala Met Val Asp
625 630 635 640

Asp Glu Ser Asp Tyr Gln Thr Glu Tyr Glu Glu Glu Leu Leu Asp Val
645 650 655

Pro Arg Asp Ala Tyr Ala Asp Phe Gln Ser Thr Ser Ala Gln Gln Gly
660 665 670

Ser Asp Leu Glu Asp Glu Ser Ser Leu Arg His Arg His Pro Ser Leu
675 680 685

Ala Phe Pro Lys Leu Ser Glu Gly Ser Ser Asp Gln Asp Gly
690 695 700

<210> 174

<211> 1425

<212> PRT

<213> Drosophila melanogaster

<400> 174

Met Asp Val Leu Glu Met Leu Arg Ala Ser Ala Ser Gly Ser Tyr Asn
1 5 10 15

Thr Thr Phe Ser Asp Ala Trp Cys Gln Tyr Val Ser Lys Gln Ile Thr
20 25 30

Ala Thr Val Tyr Met Tyr Phe Ala Leu Val Met Met Ser Leu Leu Phe
 35 40 45
 Ile Ala Trp Phe Leu Tyr Phe Lys Arg Met Ala Arg Leu Arg Leu Arg
 50 55 60
 Asp Glu Ile Ala Arg Ser Ile Ser Thr Val Thr Asn Ser Ser Gly Asp
 65 70 75 80
 Met Arg Gly Leu Arg Phe Arg Lys Arg Asp Lys Met Leu Phe Tyr Gly
 85 90 95
 Arg Arg Met Leu Arg Lys Met Lys Asn Val Ser Gly Gln Met Tyr Ser
 100 105 110
 Ser Gly Lys Gly Tyr Lys Arg Arg Ala Val Met Arg Phe Ala Arg Arg
 115 120 125
 Ile Leu Gln Leu Arg Arg Asp Asn Met Pro Leu Glu Met Arg Thr Val
 130 135 140
 Glu Pro Pro Ala Glu Tyr Leu Glu Glu Thr Ile Glu Gly Ser Asp Arg
 145 150 155 160
 Val Pro Pro Asp Ala Leu Tyr Met Leu Gln Ser Ile Arg Ile Phe Gly
 165 170 175
 His Phe Glu Lys Pro Val Phe Leu Arg Leu Cys Lys His Thr Gln Leu
 180 185 190
 Leu Glu Leu Met Ala Gly Asp Tyr Leu Phe Lys Ile Thr Asp Pro Asp
 195 200 205
 Asp Ser Val Tyr Ile Val Gln Ser Gly Met Ile Asn Val Tyr Ile Ser
 210 215 220
 Asn Ala Asp Gly Ser Thr Leu Ser Leu Lys Thr Val Arg Lys Gly Glu
 225 230 235 240
 Ser Val Thr Ser Leu Leu Ser Phe Ile Asp Val Leu Ser Gly Asn Pro
 245 250 255
 Ser Tyr Tyr Lys Thr Val Thr Ala Lys Ala Ile Glu Lys Ser Val Val
 260 265 270
 Ile Arg Leu Pro Met Gln Ala Phe Glu Glu Val Phe Gln Asp Asn Pro
 275 280 285

Asp Val Met Ile Arg Val Ile Gln Val Ile Met Ile Arg Leu Gln Arg
 290 295 300

Val Leu Phe Thr Ala Leu Arg Asn Tyr Leu Gly Leu Asn Ala Glu Leu
 305 310 315 320

Val Gln Asn His Met Arg Tyr Lys Ser Val Ser Thr Met Ser Gly Pro
 325 330 335

Ile Asn Ser Gln Thr Ser Gln Ser Ser Arg Gln Ala Pro Asn Gly Pro
 340 345 350

Pro Met Val Ile Ser Gln Met Asn Leu Met Gln Ser Ala Val Ser Gly
 355 360 365

Thr Gly Ser Ser Gly Val Ser Val Thr Val Thr Arg Pro Pro Ser Ser
 370 375 380

Pro Ser Arg His Ser Arg Glu Glu His Thr Leu Ser Asp Pro Asn Pro
 385 390 395 400

Asn Pro Asp Gly Ser Phe His Gly Thr Thr Asn Leu Phe Thr Glu Val
 405 410 415

His Gly Asp Ala Pro Asn Ala Asp Leu Phe His Gln Gln Gln Gln Gln
 420 425 430

His Ser Val Gly Asn Leu Ser Thr Arg Arg Ser Ser Ile Thr Leu Met
 435 440 445

Ala Pro Asp Pro Ser His Ser Cys Leu Gln Thr Pro Gly Val Thr Thr
 450 455 460

Ser Ile Asp Met Arg Leu Val Gln Ser Ser Ala Val Asp Ser Leu Arg
 465 470 475 480

Lys Glu Leu Gly Leu Ser Glu Glu Asp Ser His Ile Ile Glu Pro Phe
 485 490 495

Val Glu Leu Arg Glu Leu Glu Pro Asn Val Thr Leu Ile Thr Glu Gly
 500 505 510

Asn Ala Asp Asp Val Cys Val Trp Phe Val Met Thr Gly Thr Leu Ala
 515 520 525

Val Tyr Gln Ser Asn Gln Asp Ala Thr Arg Ala Lys Gln Asp Lys Ser
 530 535 540

Asp Met Leu Ile His Phe Val His Pro Gly Glu Ile Val Gly Gly Leu
 545 550 555 560

Ala Met Leu Thr Gly Glu Ala Ser Ala Tyr Thr Ile Arg Ser Arg Ser
 565 570 575

Ile Thr Arg Ile Ala Phe Ile Arg Arg Ala Ala Ile Tyr Gln Ile Met
 580 585 590

Arg Gln Arg Pro Arg Ile Val Leu Asp Leu Gly Asn Gly Val Val Arg
 595 600 605

Arg Leu Ser Pro Leu Val Arg Gln Cys Asp Tyr Ala Leu Asp Trp Ile
 610 615 620

Phe Leu Glu Ser Gly Arg Ala Val Tyr Arg Gln Asp Glu Ser Ser Asp
 625 630 635 640

Ser Thr Tyr Ile Val Leu Ser Gly Arg Met Arg Ser Val Ile Thr His
 645 650 655

Pro Gly Gly Lys Lys Glu Ile Val Gly Glu Tyr Gly Lys Gly Asp Leu
 660 665 670

Val Gly Ile Val Glu Met Ile Thr Glu Thr Ser Arg Thr Thr Thr Val
 675 680 685

Met Ala Val Arg Asp Ser Glu Leu Ala Lys Leu Pro Glu Gly Leu Phe
 690 695 700

Asn Ala Ile Lys Leu Arg Tyr Pro Ile Val Val Thr Lys Leu Ile Ser
 705 710 715 720

Phe Leu Ser His Arg Phe Leu Gly Ser Met Gln Thr Arg Ser Gly Ser
 725 730 735

Gly Ala Pro Gly Ala Pro Val Glu Ala Asn Pro Val Thr His Lys Tyr
 740 745 750

Ser Thr Val Ala Leu Val Pro Ile Thr Asp Glu Val Pro Met Thr Pro
 755 760 765

Phe Thr Tyr Glu Leu Tyr His Ser Leu Cys Ala Ile Gly Pro Val Leu
 770 775 780

His Leu Thr Ser Asp Val Val Arg Lys Gln Leu Gly Ser Asn Ile Phe
 785 790 795 800

Glu	Ala	Ala	Asn	Glu	Tyr	Arg	Leu	Thr	Ser	Trp	Leu	Ala	Gln	Gln	Glu	805	810	815	
Asp	Arg	Asn	Ile	Ile	Thr	Leu	Tyr	Gln	Cys	Asp	Ser	Ser	Leu	Ser	Ala	820	825	830	
Trp	Thr	Gln	Arg	Cys	Met	Arg	Gln	Ala	Asp	Val	Ile	Leu	Ile	Val	Gly	835	840	845	
Leu	Gly	Asp	Arg	Ser	His	Leu	Val	Gly	Lys	Phe	Glu	Arg	Glu	Ile	Asp	850	855	860	
Arg	Leu	Ala	Met	Arg	Thr	Gln	Lys	Glu	Leu	Val	Leu	Leu	Tyr	Pro	Glu	865	870	875	880
Ala	Ser	Asn	Ala	Lys	Pro	Ala	Asn	Thr	Leu	Ser	Trp	Leu	Asn	Ala	Arg	885	890	895	
Pro	Trp	Val	Thr	Lys	His	His	His	Val	Leu	Cys	Val	Lys	Arg	Ile	Phe	900	905	910	
Thr	Arg	Lys	Ser	Gln	Tyr	Arg	Ile	Asn	Asp	Leu	Tyr	Ser	Arg	Val	Leu	915	920	925	
Leu	Ser	Glu	Pro	Asn	Met	His	Ser	Asp	Phe	Ser	Arg	Leu	Ala	Arg	Trp	930	935	940	
Leu	Thr	Gly	Asn	Ser	Ile	Gly	Leu	Val	Leu	Gly	Gly	Gly	Gly	Ala	Arg	945	950	955	960
Gly	Ala	Ala	His	Ile	Gly	Met	Leu	Lys	Ala	Ile	Gln	Glu	Ala	Gly	Ile	965	970	975	
Pro	Val	Asp	Met	Val	Gly	Gly	Val	Ser	Ile	Gly	Ala	Leu	Met	Gly	Ala	980	985	990	
Leu	Trp	Cys	Ser	Glu	Arg	Asn	Ile	Thr	Thr	Val	Thr	Gln	Lys	Ala	Arg	995	1000	1005	
Glu	Trp	Ser	Lys	Lys	Met	Thr	Lys	Trp	Phe	Leu	Gln	Leu	Leu	Asp	Leu	1010	1015	1020	
Thr	Tyr	Pro	Ile	Thr	Ser	Met	Phe	Ser	Gly	Arg	Glu	Phe	Asn	Lys	Thr	1025	1030	1035	1040
Ile	His	Asp	Thr	Phe	Gly	Asp	Val	Ser	Ile	Glu	Asp	Leu	Trp	Ile	Pro	1045	1050	1055	

Tyr Phe Thr Leu Thr Thr Asp Ile Thr Ala Ser Cys His Arg Ile His
 1060 1065 1070
 Thr Asn Gly Ser Leu Trp Arg Tyr Val Arg Ser Ser Met Ser Leu Ser
 1075 1080 1085
 Gly Tyr Met Pro Pro Leu Cys Asp Pro Lys Asp Gly His Leu Leu Leu
 1090 1095 1100
 Asp Gly Gly Tyr Val Asn Asn Leu Pro Ala Asp Val Met His Asn Leu
 1105 1110 1115 1120
 Gly Ala Ala His Ile Ile Ala Ile Asp Val Gly Ser Gln Asp Asp Thr
 1125 1130 1135
 Asp Leu Thr Asn Tyr Gly Asp Asp Leu Ser Gly Trp Trp Leu Leu Tyr
 1140 1145 1150
 Lys Lys Trp Asn Pro Phe Thr Ser Pro Val Lys Val Pro Asp Leu Pro
 1155 1160 1165
 Asp Ile Gln Ser Arg Leu Ala Tyr Val Ser Cys Val Arg Gln Leu Glu
 1170 1175 1180
 Glu Val Lys Asn Ser Asp Tyr Cys Glu Tyr Ile Arg Pro Pro Ile Asp
 1185 1190 1195 1200
 Lys Tyr Lys Thr Leu Ala Phe Gly Ser Phe Asp Glu Ile Arg Asp Val
 1205 1210 1215
 Gly Tyr Val Phe Gly Lys Asn Tyr Phe Glu Ser Met Ala Lys Ala Gly
 1220 1225 1230
 Arg Leu Gly Arg Phe Asn Gln Trp Phe Asn Lys Glu Pro Pro Lys Arg
 1235 1240 1245
 Val Asn His Ala Ser Leu Asn Glu Tyr Thr Phe Ile Asp Leu Ala Gln
 1250 1255 1260
 Ile Val Cys Arg Leu Pro Glu Thr Tyr Ala Val Asn Thr Ala Glu Leu
 1265 1270 1275 1280
 Phe Ser Glu Asp Glu Asp Cys Asp Gly Tyr Ile Ser Glu Pro Thr Thr
 1285 1290 1295
 Leu Asn Thr Asp Arg Arg Arg Ile Gln Val Ser Arg Ala Gly Asn Ser
 1300 1305 1310

Leu Ser Phe Ser Glu Thr Glu Met Asp Ser Asp Val Glu Leu Asp Leu
1315 1320 1325

Lys Leu Glu Arg Lys Thr Asp Lys Ser Thr Gln Ser Ser Pro Pro Ser
1330 1335 1340

Asn Ser Arg Ser Asp Met Arg Gly Lys Glu Glu Ala Arg His Met Ser
1345 1350 1355 1360

Asn Trp His Trp Gly Val Lys His Lys Asp Glu Thr Gly Ser Gly Ala
1365 1370 1375

Asn Glu Ala Thr Lys Thr Gln Thr Gly Gln Glu Gln Glu Leu Gln Gln
1380 1385 1390

Glu Gln Gln Asp Gln Gly Ala Thr Ala Glu Gln Leu Val Asp Lys Asp
1395 1400 1405

Lys Glu Glu Asn Lys Glu Asn Arg Ser Ser Pro Asn Asn Glu Thr Lys
1410 1415 1420

Asn
1425

<210> 175
<211> 1389
<212> PRT
<213> Drosophila melanogaster

<400> 175
Met Tyr Phe Ala Leu Val Met Met Ser Leu Leu Phe Ile Ala Trp Phe
1 5 10 15

Leu Tyr Phe Lys Arg Met Ala Arg Leu Arg Leu Arg Asp Glu Ile Ala
20 25 30

Arg Ser Ile Ser Thr Val Thr Asn Ser Ser Gly Asp Met Arg Gly Leu
35 40 45

Arg Phe Arg Lys Arg Asp Lys Met Leu Phe Tyr Gly Arg Arg Met Leu
50 55 60

Arg Lys Met Lys Asn Val Ser Gly Gln Met Tyr Ser Ser Gly Lys Gly
65 70 75 80

Tyr Lys Arg Arg Ala Val Met Arg Phe Ala Arg Arg Ile Leu Gln Leu

85	90	95
Arg Arg Asp Asn Met Pro Leu Glu Met Arg Thr Val Glu Pro Pro Ala		
100	105	110
Glu Tyr Leu Glu Glu Thr Ile Glu Gly Ser Asp Arg Val Pro Pro Asp		
115	120	125
Ala Leu Tyr Met Leu Gln Ser Ile Arg Ile Phe Gly His Phe Glu Lys		
130	135	140
Pro Val Phe Leu Arg Leu Cys Lys His Thr Gln Leu Leu Glu Leu Met		
145	150	155
		160
Ala Gly Asp Tyr Leu Phe Lys Ile Thr Asp Pro Asp Asp Ser Val Tyr		
165	170	175
Ile Val Gln Ser Gly Met Ile Asn Val Tyr Ile Ser Asn Ala Asp Gly		
180	185	190
Ser Thr Leu Ser Leu Lys Thr Val Arg Lys Gly Glu Ser Val Thr Ser		
195	200	205
Leu Leu Ser Phe Ile Asp Val Leu Ser Gly Asn Pro Ser Tyr Tyr Lys		
210	215	220
Thr Val Thr Ala Lys Ala Ile Glu Lys Ser Val Val Ile Arg Leu Pro		
225	230	235
		240
Met Gln Ala Phe Glu Glu Val Phe Gln Asp Asn Pro Asp Val Met Ile		
245	250	255
Arg Val Ile Gln Val Ile Met Ile Arg Leu Gln Arg Val Leu Phe Thr		
260	265	270
Ala Leu Arg Asn Tyr Leu Gly Leu Asn Ala Glu Leu Val Gln Asn His		
275	280	285
Met Arg Tyr Lys Ser Val Ser Thr Met Ser Gly Pro Ile Asn Ser Gln		
290	295	300
Thr Ser Gln Ser Ser Arg Gln Ala Pro Asn Gly Pro Pro Met Val Ile		
305	310	315
		320
Ser Gln Met Asn Leu Met Gln Ser Ala Val Ser Gly Thr Gly Ser Ser		
325	330	335
Gly Val Ser Val Thr Val Thr Arg Pro Pro Ser Ser Pro Ser Arg His		

340	345	350
Ser Arg Glu Glu His Thr Leu Ser Asp Pro Asn Pro Asn Pro Asp Gly 355	360	365
Ser Phe His Gly Thr Thr Asn Leu Phe Thr Glu Val His Gly Asp Ala 370	375	380
Pro Asn Ala Asp Leu Phe His Gln Gln Gln Gln Gln His Ser Val Gly 385	390	395 400
Asn Leu Ser Thr Arg Arg Ser Ser Ile Thr Leu Met Ala Pro Asp Gly 405	410	415
Ser His Ser Cys Leu Gln Thr Pro Gly Val Thr Thr Ser Ile Asp Met 420	425	430
Arg Leu Val Gln Ser Ser Ala Val Asp Ser Leu Arg Lys Glu Leu Gly 435	440	445
Leu Ser Glu Glu Asp Ser His Ile Ile Glu Pro Phe Val Glu Leu Arg 450	455	460
Glu Leu Glu Pro Asn Val Thr Leu Ile Thr Glu Gly Asn Ala Asp Asp 465	470	475 480
Val Cys Val Trp Phe Val Met Thr Gly Thr Leu Ala Val Tyr Gln Ser 485	490	495
Asn Gln Asp Ala Thr Arg Ala Lys Gln Asp Lys Ser Asp Met Leu Ile 500	505	510
His Phe Val His Pro Gly Glu Ile Val Gly Gly Leu Ala Met Leu Thr 515	520	525
Gly Glu Ala Ser Ala Tyr Thr Ile Arg Ser Arg Ser Ile Thr Arg Ile 530	535	540
Ala Phe Ile Arg Arg Ala Ala Ile Tyr Gln Ile Met Arg Gln Arg Pro 545	550	555 560
Arg Ile Val Leu Asp Leu Gly Asn Gly Val Val Arg Arg Leu Ser Pro 565	570	575
Leu Val Arg Gln Cys Asp Tyr Ala Leu Asp Trp Ile Phe Leu Glu Ser 580	585	590
Gly Arg Ala Val Tyr Arg Gln Asp Glu Ser Ser Asp Ser Thr Tyr Ile		

595	600	605
Val Leu Ser Gly Arg Met Arg Ser Val Ile Thr His Pro Gly Gly Lys		
610	615	620
Lys Glu Ile Val Gly Glu Tyr Gly Lys Gly Asp Leu Val Gly Ile Val		
625	630	635 640
Glu Met Ile Thr Glu Thr Ser Arg Thr Thr Thr Val Met Ala Val Arg		
	645	650 655
Asp Ser Glu Leu Ala Lys Leu Pro Glu Gly Leu Phe Asn Ala Ile Lys		
	660	665 670
Leu Arg Tyr Pro Ile Val Val Thr Lys Leu Ile Ser Phe Leu Ser His		
	675	680 685
Arg Phe Leu Gly Ser Met Gln Thr Arg Ser Gly Ser Gly Ala Pro Gly		
	690	695 700
Ala Pro Val Glu Ala Asn Pro Val Thr His Lys Tyr Ser Thr Val Ala		
	705	710 715 720
Leu Val Pro Ile Thr Asp Glu Val Pro Met Thr Pro Phe Thr Tyr Glu		
	725	730 735
Leu Tyr His Ser Leu Cys Ala Ile Gly Pro Val Leu Arg Leu Thr Ser		
	740	745 750
Asp Val Val Arg Lys Gln Leu Gly Ser Asn Ile Phe Glu Ala Ala Asn		
	755	760 765
Glu Tyr Arg Leu Thr Ser Trp Leu Ala Gln Gln Glu Asp Arg Asn Ile		
	770	775 780
Ile Thr Leu Tyr Gln Cys Asp Ser Ser Leu Ser Ala Trp Thr Gln Arg		
	785	790 795 800
Cys Met Arg Gln Ala Asp Val Ile Leu Ile Val Gly Leu Gly Asp Arg		
	805	810 815
Ser His Leu Val Gly Lys Phe Glu Arg Glu Ile Asp Arg Leu Ala Met		
	820	825 830
Arg Thr Gln Lys Glu Leu Val Leu Leu Tyr Pro Glu Ala Ser Asn Ala		
	835	840 845
Lys Pro Ala Asn Thr Leu Ser Trp Leu Asn Ala Arg Pro Trp Val Thr		

850 855 860
 Lys His His His Val Leu Cys Val Lys Arg Ile Phe Thr Arg Lys Ser
 865 870 875 880
 Gln Tyr Arg Ile Asn Asp Leu Tyr Ser Arg Val Leu Leu Ser Glu Pro
 885 890 895
 Asn Met His Ser Asp Phe Ser Arg Leu Ala Arg Trp Leu Thr Gly Asn
 900 905 910
 Ser Ile Gly Leu Val Leu Gly Gly Gly Gly Ala Arg Gly Ala Ala His
 915 920 925
 Ile Gly Met Leu Lys Ala Ile Gln Glu Ala Gly Ile Pro Val Asp Met
 930 935 940
 Val Gly Gly Val Ser Ile Gly Ala Leu Met Gly Ala Leu Trp Cys Ser
 945 950 955 960
 Glu Arg Asn Ile Thr Thr Val Thr Gln Lys Ala Arg Glu Trp Ser Lys
 965 970 975
 Lys Met Thr Lys Trp Phe Leu Gln Leu Leu Asp Leu Thr Tyr Pro Ile
 980 985 990
 Thr Ser Met Phe Ser Gly Arg Glu Phe Asn Lys Thr Ile His Asp Thr
 995 1000 1005
 Phe Gly Asp Val Ser Ile Glu Asp Leu Trp Ile Pro Tyr Phe Thr Leu
 1010 1015 1020
 Thr Thr Asp Ile Thr Ala Ser Cys His Arg Ile His Thr Asn Gly Ser
 1025 1030 1035 1040
 Leu Trp Arg Tyr Val Arg Ser Ser Met Ser Leu Ser Gly Tyr Met Pro
 1045 1050 1055
 Pro Leu Cys Asp Pro Lys Asp Gly His Leu Leu Leu Asp Gly Gly Tyr
 1060 1065 1070
 Val Asn Asn Leu Pro Ala Asp Val Met His Asn Leu Gly Ala Ala His
 1075 1080 1085
 Ile Ile Ala Ile Asp Val Gly Ser Gln Asp Asp Thr Asp Leu Thr Asn
 1090 1095 1100
 Tyr Gly Asp Asp Leu Ser Gly Trp Trp Leu Leu Tyr Lys Lys Trp Asn

1105	1110	1115	1120
Pro Phe Thr Ser Pro Val Lys Val Pro Asp Leu Pro Asp Ile Gln Ser	1125	1130	1135
Arg Leu Ala Tyr Val Ser Cys Val Arg Gln Leu Glu Glu Val Lys Asn	1140	1145	1150
Ser Asp Tyr Cys Glu Tyr Ile Arg Pro Pro Ile Asp Lys Tyr Lys Thr	1155	1160	1165
Leu Ala Phe Gly Ser Phe Asp Glu Ile Arg Asp Val Gly Tyr Val Phe	1170	1175	1180
Gly Lys Asn Tyr Phe Glu Ser Met Ala Lys Ala Gly Arg Leu Gly Arg	1185	1190	1195
Phe Asn Gln Trp Phe Asn Lys Glu Pro Pro Lys Arg Val Asn His Ala	1205	1210	1215
Ser Leu Asn Glu Tyr Thr Phe Ile Asp Leu Ala Gln Ile Val Cys Arg	1220	1225	1230
Leu Pro Glu Thr Tyr Ala Val Asn Thr Ala Glu Leu Phe Ser Glu Asp	1235	1240	1245
Glu Asp Cys Asp Gly Tyr Ile Ser Glu Pro Thr Thr Leu Asn Thr Asp	1250	1255	1260
Arg Arg Arg Ile Gln Val Ser Arg Ala Gly Asn Ser Leu Ser Phe Ser	1265	1270	1275
Glu Thr Glu Met Asp Ser Asp Val Glu Leu Asp Leu Lys Leu Glu Arg	1285	1290	1295
Lys Thr Asp Lys Ser Thr Gln Ser Ser Pro Pro Ser Asn Ser Arg Ser	1300	1305	1310
Asp Met Arg Gly Lys Glu Glu Ala Arg His Met Ser Asn Trp His Trp	1315	1320	1325
Gly Val Lys His Lys Asp Glu Thr Gly Ser Gly Ala Thr Glu Ala Thr	1330	1335	1340
Lys Thr Gln Thr Gly Gln Glu Gln Glu Leu Gln Gln Glu Gln Asp	1345	1350	1355
Gln Gly Ala Thr Ala Glu Gln Leu Val Asp Lys Asp Lys Glu Glu Asn			1360

Glu Leu Cys Leu Pro Gly Pro Asp Gly Lys Glu Cys Val Val Lys Glu
 195 200 205
 Val Val Pro Gly Asp Ser Val Asn Ser Leu Leu Ser Ile Leu Asp Val
 210 215 220
 Ile Thr Gly His Gln His Pro Gln Arg Thr Val Ser Ala Arg Ala Ala
 225 230 235 240
 Arg Asp Ser Thr Val Leu Arg Leu Pro Val Glu Ala Phe Ser Ala Val
 245 250 255
 Phe Thr Lys Tyr Pro Glu Ser Leu Val Arg Val Val Gln Ile Ile Met
 260 265 270
 Val Arg Leu Gln Arg Val Thr Phe Leu Ala Leu His Asn Tyr Leu Gly
 275 280 285
 Leu Thr Asn Glu Leu Phe Ser His Glu Ile Gln Pro Leu Arg Leu Phe
 290 295 300
 Pro Ser Pro Gly Leu Pro Thr Arg Thr Ser Pro Val Arg Gly Ser Lys
 305 310 315 320
 Arg Met Val Ser Thr Ser Ala Thr Asp Glu Pro Arg Glu Thr Pro Gly
 325 330 335
 Arg Pro Pro Asp Pro Thr Gly Ala Pro Leu Pro Gly Pro Thr Gly Asp
 340 345 350
 Pro Val Lys Pro Thr Ser Leu Glu Thr Pro Ser Ala Pro Leu Leu Ser
 355 360 365
 Arg Cys Val Ser Met Pro Gly Asp Ile Ser Gly Leu Gln Gly Gly Pro
 370 375 380
 Arg Ser Asp Phe Asp Met Ala Tyr Glu Arg Gly Arg Ile Ser Val Ser
 385 390 395 400
 Leu Gln Glu Glu Ala Ser Gly Gly Ser Leu Ala Ala Pro Ala Arg Thr
 405 410 415
 Pro Thr Gln Glu Pro Arg Glu Gln Pro Ala Gly Ala Cys Glu Tyr Ser
 420 425 430
 Tyr Cys Glu Asp Glu Ser Ala Thr Gly Gly Cys Pro Phe Gly Pro Tyr
 435 440 445

Gln Gly Arg Gln Thr Ser Ser Ile Phe Glu Ala Ala Lys Gln Glu Leu
 450 455 460

Ala Lys Leu Met Arg Ile Glu Asp Pro Ser Leu Leu Asn Ser Arg Val
 465 470 475 480

Leu Leu His His Ala Lys Ala Gly Thr Ile Ile Ala Arg Gln Gly Asp
 485 490 495

Gln Asp Val Ser Leu His Phe Val Leu Trp Gly Cys Leu His Val Tyr
 500 505 510

Gln Arg Met Ile Asp Lys Ala Glu Asp Val Cys Leu Phe Val Ala Gln
 515 520 525

Pro Gly Glu Leu Val Gly Gln Leu Ala Val Leu Thr Gly Glu Pro Leu
 530 535 540

Ile Phe Thr Leu Arg Ala Gln Arg Asp Cys Thr Phe Leu Arg Ile Ser
 545 550 555 560

Lys Ser Asp Phe Tyr Glu Ile Met Arg Ala Gln Pro Ser Val Val Leu
 565 570 575

Ser Ala Ala His Thr Val Ala Ala Arg Met Ser Pro Phe Val Arg Gln
 580 585 590

Met Asp Phe Ala Ile Asp Trp Thr Ala Val Glu Ala Gly Arg Ala Leu
 595 600 605

Tyr Arg Gln Gly Asp Arg Ser Asp Cys Thr Tyr Ile Val Leu Asn Gly
 610 615 620

Arg Leu Arg Ser Val Ile Gln Arg Gly Ser Gly Lys Lys Glu Leu Val
 625 630 635 640

Gly Glu Tyr Gly Arg Gly Asp Leu Ile Gly Val Val Glu Ala Leu Thr
 645 650 655

Arg Gln Pro Arg Ala Thr Thr Val His Ala Val Arg Asp Thr Glu Leu
 660 665 670

Ala Lys Leu Pro Glu Gly Thr Leu Gly His Ile Lys Arg Arg Tyr Pro
 675 680 685

Gln Val Val Thr Arg Leu Ile His Leu Leu Ser Gln Lys Ile Leu Gly
 690 695 700

Asn Leu Gln Gln Leu Gln Gly Pro Phe Pro Ala Gly Ser Gly Leu Gly
 705 710 715 720
 Val Pro Pro His Ser Glu Leu Thr Asn Pro Ala Ser Asn Leu Ala Thr
 725 730 735
 Val Ala Ile Leu Pro Val Cys Ala Glu Val Pro Met Val Ala Phe Thr
 740 745 750
 Leu Glu Leu Gln His Ala Leu Gln Ala Ile Gly Pro Thr Leu Leu Leu
 755 760 765
 Asn Ser Asp Ile Ile Arg Ala Arg Leu Gly Ala Ser Ala Leu Asp Ser
 770 775 780
 Ile Gln Glu Phe Arg Leu Ser Gly Trp Leu Ala Gln Gln Glu Asp Ala
 785 790 795 800
 His Arg Ile Val Leu Tyr Gln Thr Asp Ala Ser Leu Thr Pro Trp Thr
 805 810 815
 Val Arg Cys Leu Arg Gln Ala Asp Cys Ile Leu Ile Val Gly Leu Gly
 820 825 830
 Asp Gln Glu Pro Thr Leu Gly Gln Leu Glu Gln Met Leu Glu Asn Thr
 835 840 845
 Ala Val Arg Ala Leu Lys Gln Leu Val Leu Leu His Arg Glu Glu Gly
 850 855 860
 Ala Gly Pro Thr Arg Thr Val Glu Trp Leu Asn Met Arg Ser Trp Cys
 865 870 875 880
 Ser Gly His Leu His Leu Arg Cys Pro Arg Arg Leu Phe Ser Arg Arg
 885 890 895
 Ser Pro Ala Lys Leu His Glu Leu Tyr Glu Lys Val Phe Ser Arg Arg
 900 905 910
 Ala Asp Arg His Ser Asp Phe Ser Arg Leu Ala Arg Val Leu Thr Gly
 915 920 925
 Asn Thr Ile Ala Leu Val Leu Gly Gly Gly Gly Ala Arg Gly Cys Ser
 930 935 940
 His Ile Gly Val Leu Lys Ala Leu Glu Glu Ala Gly Val Pro Val Asp
 945 950 955 960

Leu Val Gly Gly Thr Ser Ile Gly Ser Phe Ile Gly Ala Leu Tyr Ala
 965 970 975

Glu Glu Arg Ser Ala Ser Arg Thr Lys Gln Arg Ala Arg Glu Trp Ala
 980 985 990

Lys Ser Met Thr Ser Val Leu Glu Pro Val Leu Asp Leu Thr Tyr Pro
 995 1000 1005

Val Thr Ser Met Phe Thr Gly Ser Ala Phe Asn Arg Ser Ile His Arg
 1010 1015 1020

Val Phe Gln Asp Lys Gln Ile Glu Asp Leu Trp Leu Pro Tyr Phe Asn
 1025 1030 1035 1040

Val Thr Thr Asp Ile Thr Ala Ser Ala Met Arg Val His Lys Asp Gly
 1045 1050 1055

Ser Leu Trp Arg Tyr Val Arg Ala Ser Met Thr Leu Ser Gly Tyr Leu
 1060 1065 1070

Pro Pro Leu Cys Asp Pro Lys Asp Gly His Leu Leu Met Asp Gly Gly
 1075 1080 1085

Tyr Ile Asn Asn Leu Pro Ala Asp Ile Ala Arg Ser Met Gly Ala Lys
 1090 1095 1100

Thr Val Ile Ala Ile Asp Val Gly Ser Gln Asp Glu Thr Asp Leu Ser
 1105 1110 1115 1120

Thr Tyr Gly Asp Ser Leu Ser Gly Trp Trp Leu Leu Trp Lys Arg Leu
 1125 1130 1135

Asn Pro Trp Ala Asp Lys Val Lys Val Pro Asp Met Ala Glu Ile Gln
 1140 1145 1150

Ser Arg Leu Ala Tyr Val Ser Cys Val Arg Gln Leu Glu Val Val Lys
 1155 1160 1165

Ser Ser Ser Tyr Cys Glu Tyr Leu Arg Pro Pro Ile Asp Cys Phe Lys
 1170 1175 1180

Thr Met Asp Phe Gly Lys Phe Asp Gln Ile Tyr Asp Val Gly Tyr Gln
 1185 1190 1195 1200

Tyr Gly Lys Ala Val Phe Gly Gly Trp Ser Arg Gly Asn Val Ile Glu
 1205 1210 1215

Lys Met Leu Thr Asp Arg Arg Ser Thr Asp Leu Asn Glu Ser Arg Arg
 1220 1225 1230
 Ala Asp Val Leu Ala Phe Pro Ser Ser Gly Phe Thr Asp Leu Ala Glu
 1235 1240 1245
 Ile Val Ser Arg Ile Glu Pro Pro Thr Ser Tyr Val Ser Asp Gly Cys
 1250 1255 1260
 Ala Asp Gly Glu Glu Ser Asp Cys Leu Thr Glu Tyr Glu Glu Asp Ala
 1265 1270 1275 1280
 Gly Pro Asp Cys Ser Arg Asp Glu Gly Gly Ser Pro Glu Gly Ala Ser
 1285 1290 1295
 Pro Ser Thr Ala Ser Glu Met Glu Glu Glu Lys Ser Ile Leu Arg Gln
 1300 1305 1310
 Arg Arg Cys Leu Pro Gln Glu Pro Pro Gly Ser Ala Thr Asp Ala
 1315 1320 1325

 <210> 177
 <211> 331
 <212> PRT
 <213> Homo sapiens

 <400> 177
 Pro Asp Arg His Ser Asp Phe Ser Arg Leu Ala Arg Val Leu Thr Gly
 1 5 10 15
 Asn Ala Ile Ala Leu Val Leu Gly Gly Gly Gly Ala Ser Met Thr Ser
 20 25 30
 Leu Met Lys Ala Ala Leu Asp Leu Thr Tyr Pro Ile Thr Ser Met Phe
 35 40 45
 Ser Gly Ala Gly Phe Asn Ser Ser Ile Phe Ser Val Phe Lys Asp Gln
 50 55 60
 Gln Ile Glu Asp Leu Trp Ile Pro Tyr Phe Ala Ile Thr Thr Asp Ile
 65 70 75 80
 Thr Ala Ser Ala Met Arg Val His Thr Asp Gly Ser Leu Trp Trp Tyr
 85 90 95
 Val Arg Ala Ser Met Ser Leu Ser Gly Tyr Met Pro Pro Leu Cys Asp
 100 105 110

Pro Lys Asp Gly His Leu Leu Met Asp Gly Gly Tyr Ile Asn Asn Leu
115 120 125

Pro Ala Ala Ser Ala Pro Arg Ser Leu Gly Trp Asn Thr Phe Ser Leu
130 135 140

Glu Tyr Ala Lys Gly Lys Cys Gln Ala Gly Ile Arg Ala Pro Arg Thr
145 150 155 160

Cys Thr Arg Val Tyr Met His Thr Gln Ala Pro Ala Ala Cys Ala Pro
165 170 175

Ala Tyr Gly Pro Val Cys Gln Leu Ser Ser Met Gln Asn Lys Gly Gln
180 185 190

Val Glu Glu Leu Gly Ala Ile Lys Pro His Leu Cys Pro Gln Ser Glu
195 200 205

Thr Asn Ser Leu Gln Gly Val Thr Arg Ala Gly Phe Ser Leu Ala Asp
210 215 220

Val Ala Arg Ser Met Gly Ala Lys Val Val Ile Ala Ile Asp Val Gly
225 230 235 240

Ser Arg Asp Glu Thr Asp Leu Thr Asn Tyr Gly Asp Ala Leu Ser Gly
245 250 255

Trp Trp Leu Leu Trp Lys Arg Trp Asn Pro Leu Ala Thr Lys Val Lys
260 265 270

Val Leu Asn Met Ala Glu Ile Gln Thr Arg Leu Ala Tyr Val Cys Cys
275 280 285

Val Arg Gln Leu Glu Val Val Lys Ser Ser Asp Tyr Cys Glu Tyr Leu
290 295 300

Arg Pro Pro Ile Asp Ser Tyr Ser Thr Leu Asp Phe Gly Lys Phe Asn
305 310 315 320

Glu Ile Cys Glu Val Gly Tyr Gln His Gly Arg
325 330

<210> 178

<211> 289

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: UPF0028 domain
sequence

<400> 178

Ile Ala Phe Gln Ser Asp Phe Ser Arg Leu Ala Arg Ile Leu Thr Gly
1 5 10 15

Asn Ala Ile Gly Leu Val Leu Gly Gly Gly Gly Ala Arg Gly Ala Ala
20 25 30

His Ile Gly Val Ile Gln Ala Leu Lys Glu Val Gly Ile Pro Ile Asp
35 40 45

Ile Val Gly Gly Thr Ser Ile Gly Ser Leu Val Gly Ala Leu Tyr Ala
50 55 60

Cys Asp Pro Asp Ser Val Leu Val Asp Ala Arg Ala Lys Trp Phe Phe
65 70 75 80

Ser Gly Ser Ser Ser Ile Trp Asp Arg Leu Met Asp Leu Thr Trp Pro
85 90 95

Arg Ser Gly Leu Leu Thr Gly His Arg Phe Asn Arg Gln Val Gln Glu
100 105 110

Ile Phe Gly Glu Thr Leu Ile Glu Asp Cys Trp Arg Ser Phe Phe Cys
115 120 125

Val Ser Thr Asp Leu Ser Thr Ser Arg Gln Arg Ile His Arg Glu Gly
130 135 140

Asp Leu Trp Leu Ala Ile Arg Ala Ser Met Ser Ile Ala Gly Leu Leu
145 150 155 160

Pro Pro Val Cys Gln Asn Gly His Leu Leu Leu Asp Gly Gly Tyr Val
165 170 175

Asn Asn Leu Pro Ala Asp Val Met Arg Ala Leu Gly Ala Asp Ile Val
180 185 190

Ile Ala Val Asp Val Gly Ser Ala Asp Leu Thr Asn Leu Asp Leu Tyr
195 200 205

Gly Phe Ser Leu Ser Gly Glu Trp Ile Leu Phe Lys Arg Trp Asn Pro
210 215 220

Phe Gly Ala Arg Leu Arg Ile Leu Asn Met Ser Glu Ile Gln Arg Arg
 225 230 235 240

Leu Ala Tyr Val Pro Cys Val Arg Ala Leu Glu Thr Ala Lys Asn Thr
 245 250 255

Val Tyr Cys Arg Tyr Leu Lys Arg Pro Ile Glu Ala Phe Asp Thr Leu
 260 265 270

Asp Phe Ser Lys Phe Pro Glu Ile Pro Gln Ile Gly Val Leu Tyr Phe
 275 280 285

Lys

<210> 179

<211> 94

<212> PRT

<213> Homo sapiens

<400> 179

Ala Leu Asp Trp Val Glu Val Glu Ala Gly Arg Ala Ile Tyr Arg Gln
 1 5 10 15

Gly Asp Lys Ser Asp Cys Thr Tyr Ile Met Leu Ser Gly Arg Leu Arg
 20 25 30

Ser Val Ile Arg Lys Asp Asp Gly Lys Lys Arg Leu Ala Gly Glu Tyr
 35 40 45

Gly Arg Gly Asp Leu Val Gly Val Val Glu Thr Leu Thr His Gln Ala
 50 55 60

Arg Ala Thr Thr Val His Ala Val Arg Asp Ser Glu Leu Ala Lys Leu
 65 70 75 80

Pro Ala Gly Ala Leu Thr Cys Ile Lys Arg Arg Tyr Pro Gln
 85 90

<210> 180

<211> 94

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Cyclic

nucleotide-binding domain sequence

<400> 180

Ala Leu Glu Glu Arg Ser Tyr Pro Ala Gly Glu Val Ile Ile Arg Gln
1 5 10 15

Gly Asp Pro Gly Asp Ser Leu Tyr Ile Val Val Ser Gly Ser Val Glu
20 25 30

Val Tyr Arg Leu Leu Glu Asp Gly Arg Glu Gln Ile Val Gly Thr Leu
35 40 45

Gly Pro Gly Asp Leu Phe Gly Glu Leu Ala Leu Leu Thr Asn Pro Pro
50 55 60

Arg Thr Ala Thr Val Arg Ala Leu Thr Asp Cys Glu Leu Leu Arg Leu
65 70 75 80

Asp Arg Glu Asp Phe Glu Arg Leu Leu Glu Gln Tyr Pro Glu
85 90

<210> 181

<211> 89

<212> PRT

<213> Homo sapiens

<400> 181

His Val Pro Ala Gly Thr Val Val Ser Arg Gln Gly Asp Gln Asp Ala
1 5 10 15

Ser Ile Leu Phe Val Val Ser Gly Leu Leu His Val Tyr Gln Arg Lys
20 25 30

Ile Gly Ser Gln Glu Asp Thr Cys Leu Phe Leu Thr Arg Pro Gly Glu
35 40 45

Met Val Gly Gln Leu Ala Val Leu Thr Gly Glu Pro Leu Ile Phe Thr
50 55 60

Val Lys Ala Asn Arg Asp Cys Ser Phe Leu Ser Ile Ser Lys Ala His
65 70 75 80

Phe Tyr Glu Ile Met Arg Lys Gln Pro
85

<210> 182

<211> 88
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Cyclic
nucleotide-binding domain sequence

<400> 182

Ser Tyr Pro Ala Gly Glu Val Ile Ile Arg Gln Gly Asp Pro Gly Asp
1 5 10 15

Ser Leu Tyr Ile Val Val Ser Gly Ser Val Glu Val Tyr Arg Leu Leu
20 25 30

Glu Asp Gly Arg Glu Gln Ile Val Gly Thr Leu Gly Pro Gly Asp Leu
35 40 45

Phe Gly Glu Leu Ala Leu Leu Thr Asn Pro Pro Arg Thr Ala Thr Val
50 55 60

Arg Ala Leu Thr Asp Cys Glu Leu Leu Arg Leu Asp Arg Glu Asp Phe
65 70 75 80

Glu Arg Leu Leu Glu Gln Tyr Pro
85

<210> 183
<211> 101
<212> PRT
<213> Homo sapiens

<400> 183

His Ile Val Phe Val Gln Leu Gln Glu Gly Glu His Val Phe Gln Pro
1 5 10 15

Arg Glu Pro Asp Pro Ser Ile Cys Val Val Gln Asp Gly Arg Leu Glu
20 25 30

Val Cys Ile Gln Asp Thr Asp Gly Thr Glu Val Val Val Lys Glu Val
35 40 45

Leu Ala Gly Asp Ser Val His Ser Leu Leu Ser Ile Leu Asp Ile Ile
50 55 60

Thr Gly His Ala Ala Pro Tyr Lys Thr Val Ser Val Arg Ala Ala Ile
65 70 75 80

Pro Ser Thr Ile Leu Arg Leu Pro Ala Ala Ala Phe His Gly Val Phe
85 90 95

Glu Lys Tyr Pro Glu
100

<210> 184

<211> 94

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Cyclic
nucleotide-binding domain sequence

<400> 184

Ala Leu Glu Glu Arg Ser Tyr Pro Ala Gly Glu Val Ile Ile Arg Gln
1 5 10 15

Gly Asp Pro Gly Asp Ser Leu Tyr Ile Val Val Ser Gly Ser Val Glu
20 25 30

Val Tyr Arg Leu Leu Glu Asp Gly Arg Glu Gln Ile Val Gly Thr Leu
35 40 45

Gly Pro Gly Asp Leu Phe Gly Glu Leu Ala Leu Leu Thr Asn Pro Pro
50 55 60

Arg Thr Ala Thr Val Arg Ala Leu Thr Asp Cys Glu Leu Leu Arg Leu
65 70 75 80

Asp Arg Glu Asp Phe Glu Arg Leu Leu Glu Gln Tyr Pro Glu
85 90

<210> 185

<211> 115

<212> PRT

<213> Homo sapiens

<400> 185

Ser Phe Val Arg Gln Ile Asp Phe Ala Leu Asp Trp Val Glu Val Glu
1 5 10 15

Ala Gly Arg Ala Ile Tyr Arg Gln Gly Asp Lys Ser Asp Cys Thr Tyr
20 25 30

Ile Met Leu Ser Gly Arg Leu Arg Ser Val Ile Arg Lys Asp Asp Gly
 35 40 45
 Lys Lys Arg Leu Ala Gly Glu Tyr Gly Arg Gly Asp Leu Val Gly Val
 50 55 60
 Val Glu Thr Leu Thr His Gln Ala Arg Ala Thr Thr Val His Ala Val
 65 70 75 80
 Arg Asp Ser Glu Leu Ala Lys Leu Pro Ala Gly Ala Leu Thr Cys Ile
 85 90 95
 Lys Arg Arg Tyr Pro Gln Val Val Thr Arg Leu Ile His Leu Leu Gly
 100 105 110
 Glu Lys Ile
 115

<210> 186

<211> 114

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Cyclic
nucleotide-binding domain sequence

<400> 186

Glu Glu Leu Arg Glu Leu Ala Asp Ala Leu Glu Pro Val Arg Tyr Pro
 1 5 10 15
 Ala Gly Glu Val Ile Ile Arg Gln Gly Asp Val Gly Asp Ser Phe Tyr
 20 25 30
 Ile Ile Val Ser Gly Glu Val Glu Val Tyr Lys Thr Leu Glu Asp Gly
 35 40 45
 Arg Glu Gln Ile Leu Gly Thr Leu Gly Pro Gly Asp Phe Phe Gly Glu
 50 55 60
 Leu Ala Leu Leu Thr Asn Arg Arg Arg Ala Arg Ser Ala Ala Ala Val
 65 70 75 80
 Ala Leu Glu Leu Ala Lys Leu Leu Arg Ile Asp Phe Arg Asp Phe Leu
 85 90 95

Gln Leu Leu Pro Glu Ile Pro Gln Leu Leu Glu Leu Leu Leu Glu
100 105 110

Leu Ala

<210> 187

<211> 123

<212> PRT

<213> Homo sapiens

<400> 187

Val Leu Gly His Phe Glu Lys Pro Leu Phe Leu Glu Leu Cys Lys His
1 5 10 15

Ile Val Phe Val Gln Leu Gln Glu Gly Glu His Val Phe Gln Pro Arg
20 25 30

Glu Pro Asp Pro Ser Ile Cys Val Val Gln Asp Gly Arg Leu Glu Val
35 40 45

Cys Ile Gln Asp Thr Asp Gly Thr Glu Val Val Val Lys Glu Val Leu
50 55 60

Ala Gly Asp Ser Val His Ser Leu Leu Ser Ile Leu Asp Ile Ile Thr
65 70 75 80

Gly His Ala Ala Pro Tyr Lys Thr Val Ser Val Arg Ala Ala Ile Pro
85 90 95

Ser Thr Ile Leu Arg Leu Pro Ala Ala Ala Phe His Gly Val Phe Glu
100 105 110

Lys Tyr Pro Glu Thr Leu Val Arg Val Val Gln
115 120

<210> 188

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Cyclic
nucleotide-binding domain sequence

<400> 188

Leu Phe Lys Ala Leu Asp Ala Glu Glu Leu Arg Glu Leu Ala Asp Ala
 1 5 10 15
 Leu Glu Pro Val Arg Tyr Pro Ala Gly Glu Val Ile Ile Arg Gln Gly
 20 25 30
 Asp Val Gly Asp Ser Phe Tyr Ile Ile Val Ser Gly Glu Val Glu Val
 35 40 45
 Tyr Lys Thr Leu Glu Asp Gly Arg Glu Gln Ile Leu Gly Thr Leu Gly
 50 55 60
 Pro Gly Asp Phe Phe Gly Glu Leu Ala Leu Leu Thr Asn Arg Arg Arg
 65 70 75 80
 Ala Arg Ser Ala Ala Ala Val Ala Leu Glu Leu Ala Lys Leu Leu Arg
 85 90 95
 Ile Asp Phe Arg Asp Phe Leu Gln Leu Leu Pro Glu Ile Pro Gln Leu
 100 105 110
 Leu Leu Glu Leu Leu Leu
 115

<210> 189
 <211> 89
 <212> PRT
 <213> Homo sapiens

<400> 189
 His Val Pro Ala Gly Thr Val Val Ser Arg Gln Gly Asp Gln Asp Ala
 1 5 10 15
 Ser Ile Leu Phe Val Val Ser Gly Leu Leu His Val Tyr Gln Arg Lys
 20 25 30
 Ile Gly Ser Gln Glu Asp Thr Cys Leu Phe Leu Thr Arg Pro Gly Glu
 35 40 45
 Met Val Gly Gln Leu Ala Val Leu Thr Gly Glu Pro Leu Ile Phe Thr
 50 55 60
 Val Lys Ala Asn Arg Asp Cys Ser Phe Leu Ser Ile Ser Lys Ala His
 65 70 75 80
 Phe Tyr Glu Ile Met Arg Lys Gln Pro
 85

<210> 190
<211> 90
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Cyclic
nucleotide-binding domain sequence

<400> 190
Arg Tyr Pro Ala Gly Glu Val Ile Ile Arg Gln Gly Asp Val Gly Asp
1 5 10 15
Ser Phe Tyr Ile Ile Val Ser Gly Glu Val Glu Val Tyr Lys Thr Leu
20 25 30
Glu Asp Gly Arg Glu Gln Ile Leu Gly Thr Leu Gly Pro Gly Asp Phe
35 40 45
Phe Gly Glu Leu Ala Leu Leu Thr Asn Arg Arg Arg Ala Arg Ser Ala
50 55 60
Ala Ala Val Ala Leu Glu Leu Ala Lys Leu Leu Arg Ile Asp Phe Arg
65 70 75 80
Asp Phe Leu Gln Leu Leu Pro Glu Ile Pro
85 90

<210> 191
<211> 330
<212> PRT
<213> Homo sapiens

<400> 191
Met Arg Arg Pro Ser Val Arg Ala Ala Gly Leu Val Leu Cys Thr Leu
1 5 10 15
Cys Tyr Leu Leu Val Gly Ala Ala Val Phe Asp Ala Leu Glu Ser Glu
20 25 30
Ala Glu Ser Gly Arg Gln Arg Leu Leu Val Gln Lys Arg Gly Ala Leu
35 40 45
Arg Arg Lys Phe Gly Phe Ser Ala Glu Asp Tyr Arg Glu Leu Glu Arg
50 55 60

Leu Ala Leu Gln Ala Glu Pro His Arg Ala Gly Arg Gln Trp Lys Phe
 65 70 75 80
 Pro Gly Ser Phe Tyr Phe Ala Ile Thr Val Ile Thr Thr Ile Glu Tyr
 85 90 95
 Gly His Ala Ala Pro Gly Thr Asp Ser Gly Lys Val Phe Cys Met Phe
 100 105 110
 Tyr Ala Leu Leu Gly Ile Pro Leu Thr Leu Val Thr Phe Gln Ser Leu
 115 120 125
 Gly Glu Arg Leu Asn Ala Val Val Arg Arg Leu Leu Leu Ala Ala Lys
 130 135 140
 Cys Cys Leu Gly Leu Arg Trp Thr Cys Val Ser Thr Glu Asn Leu Val
 145 150 155 160
 Val Ala Gly Leu Leu Ala Cys Ala Ala Thr Leu Ala Leu Gly Ala Val
 165 170 175
 Ala Phe Ser His Phe Glu Gly Trp Thr Phe Phe His Ala Tyr Tyr Tyr
 180 185 190
 Cys Phe Ile Thr Leu Thr Thr Ile Gly Phe Gly Asp Phe Val Ala Leu
 195 200 205
 Gln Ser Gly Glu Ala Leu Gln Arg Lys Leu Pro Tyr Val Ala Phe Ser
 210 215 220
 Phe Leu Tyr Ile Leu Leu Gly Leu Thr Val Ile Gly Ala Phe Leu Asn
 225 230 235 240
 Leu Val Val Leu Arg Phe Leu Val Ala Ser Ala Asp Trp Pro Glu Arg
 245 250 255
 Ala Ala Arg Thr Pro Ser Pro Arg Pro Pro Gly Ala Pro Glu Ser Arg
 260 265 270
 Gly Leu Trp Leu Pro Arg Arg Pro Ala Arg Ser Val Gly Ser Ala Ser
 275 280 285
 Val Phe Cys His Val His Lys Leu Glu Arg Cys Ala Arg Asp Asn Leu
 290 295 300
 Gly Phe Ser Pro Pro Ser Ser Pro Gly Val Val Arg Gly Gly Gln Ala
 305 310 315 320

Pro Arg Leu Gly Ala Arg Trp Lys Ser Ile
 325 330

<210> 192
 <211> 330
 <212> PRT
 <213> Homo sapiens

<400> 192
 Met Arg Arg Pro Ser Val Arg Ala Ala Gly Leu Val Leu Cys Thr Leu
 1 5 10 15
 Cys Tyr Leu Leu Val Gly Ala Ala Val Phe Asp Ala Leu Glu Ser Glu
 20 25 30
 Ala Glu Ser Gly Arg Gln Arg Leu Leu Val Gln Lys Arg Gly Ala Leu
 35 40 45
 Arg Arg Lys Phe Gly Phe Ser Ala Glu Asp Tyr Arg Glu Leu Glu Arg
 50 55 60
 Leu Ala Leu Gln Ala Glu Pro His Arg Ala Gly Arg Gln Trp Lys Phe
 65 70 75 80
 Pro Gly Ser Phe Tyr Phe Ala Ile Thr Val Ile Thr Thr Ile Gly Tyr
 85 90 95
 Gly His Ala Ala Pro Gly Thr Asp Ser Gly Lys Val Phe Cys Met Phe
 100 105 110
 Tyr Ala Leu Leu Gly Ile Pro Leu Thr Leu Val Thr Phe Gln Ser Leu
 115 120 125
 Gly Glu Arg Leu Asn Ala Val Val Arg Arg Leu Leu Leu Ala Ala Lys
 130 135 140
 Cys Cys Leu Gly Leu Arg Trp Thr Cys Val Ser Thr Glu Asn Leu Val
 145 150 155 160
 Val Ala Gly Leu Leu Ala Cys Ala Ala Thr Leu Ala Leu Gly Ala Val
 165 170 175
 Ala Phe Ser His Phe Glu Gly Trp Thr Phe Phe His Ala Tyr Tyr Tyr
 180 185 190
 Cys Phe Ile Thr Leu Thr Thr Ile Gly Phe Gly Asp Phe Val Ala Leu

195	200	205
Gln Ser Gly Glu Ala Leu Gln Arg Lys Leu Pro Tyr Val Ala Phe Ser		
210	215	220
Phe Leu Tyr Ile Leu Leu Gly Leu Thr Val Ile Gly Ala Phe Leu Asn		
225	230	235 240
Leu Val Val Leu Arg Phe Leu Val Ala Ser Ala Asp Trp Pro Glu Arg		
	245	250 255
Ala Ala Arg Pro Pro Ser Pro Arg Pro Pro Gly Ala Pro Glu Ser Arg		
	260	265 270
Gly Leu Trp Leu Pro Arg Arg Pro Ala Arg Ser Val Gly Ser Ala Ser		
	275	280 285
Val Phe Cys His Val His Lys Leu Glu Arg Cys Ala Arg Asp Asn Leu		
	290	295 300
Gly Phe Ser Pro Pro Ser Ser Pro Gly Val Val Arg Gly Gly Gln Ala		
305	310	315 320
Pro Arg Pro Gly Ala Arg Trp Lys Ser Ile		
	325	330

<210> 193
 <211> 330
 <212> PRT
 <213> Homo sapiens

<400> 193
Met Arg Arg Pro Ser Val Arg Ala Ala Gly Leu Val Leu Cys Thr Leu
1 5 10 15
Cys Tyr Leu Leu Val Gly Ala Ala Val Phe Asp Ala Leu Glu Ser Glu
20 25 30
Ala Glu Ser Gly Arg Gln Arg Leu Leu Val Gln Lys Arg Gly Ala Leu
35 40 45
Arg Arg Lys Phe Gly Phe Ser Ala Glu Asp Tyr Arg Glu Leu Glu Arg
50 55 60
Leu Ala Leu Gln Ala Glu Pro His Arg Ala Gly Arg Gln Trp Lys Phe
65 70 75 80

<210> 194
 <211> 374
 <212> PRT
 <213> Homo sapiens

<400> 194

Met	Lys	Arg	Gln	Asn	Val	Arg	Thr	Leu	Ser	Leu	Ile	Val	Cys	Thr	Phe
1				5					10					15	
Thr	Tyr	Leu	Leu	Val	Gly	Ala	Ala	Val	Phe	Asp	Ala	Leu	Glu	Ser	Asp
			20					25					30		
His	Glu	Met	Arg	Glu	Glu	Glu	Lys	Leu	Lys	Ala	Glu	Glu	Ile	Arg	Ile
		35					40						45		
Lys	Gly	Lys	Tyr	Asn	Ile	Ser	Ser	Glu	Asp	Tyr	Arg	Gln	Leu	Glu	Leu
	50					55					60				
Val	Ile	Leu	Gln	Ser	Glu	Pro	His	Arg	Ala	Gly	Val	Gln	Trp	Lys	Phe
65					70					75					80
Ala	Gly	Ser	Phe	Tyr	Phe	Ala	Ile	Thr	Val	Ile	Thr	Thr	Ile	Gly	Tyr
			85						90					95	
Gly	His	Ala	Ala	Pro	Gly	Thr	Asp	Ala	Gly	Lys	Ala	Phe	Cys	Met	Phe
		100						105					110		
Tyr	Ala	Val	Leu	Gly	Ile	Pro	Leu	Thr	Leu	Val	Met	Phe	Gln	Ser	Leu
	115						120					125			
Gly	Glu	Arg	Met	Asn	Thr	Phe	Val	Arg	Tyr	Leu	Leu	Lys	Arg	Ile	Lys
	130					135					140				
Lys	Cys	Cys	Gly	Met	Arg	Asn	Thr	Asp	Val	Ser	Met	Glu	Asn	Met	Val
145					150					155					160
Thr	Val	Gly	Phe	Phe	Ser	Cys	Met	Gly	Thr	Leu	Cys	Ile	Gly	Ala	Ala
			165						170					175	
Ala	Phe	Ser	Gln	Cys	Glu	Glu	Trp	Ser	Phe	Phe	His	Ala	Tyr	Tyr	Tyr
			180					185					190		
Cys	Phe	Ile	Thr	Leu	Thr	Thr	Ile	Gly	Phe	Gly	Asp	Tyr	Val	Ala	Leu
	195						200					205			
Gln	Thr	Lys	Gly	Ala	Leu	Gln	Lys	Lys	Pro	Leu	Tyr	Val	Ala	Phe	Ser
	210					215					220				

Phe Met Tyr Ile Leu Val Gly Leu Thr Val Ile Gly Ala Phe Leu Asn
 225 230 235 240
 Leu Val Val Leu Arg Phe Leu Thr Met Asn Ser Glu Asp Glu Arg Arg
 245 250 255
 Asp Ala Glu Glu Arg Ala Ser Leu Ala Gly Asn Arg Asn Ser Met Val
 260 265 270
 Ile His Ile Pro Glu Glu Pro Arg Pro Ser Arg Pro Arg Tyr Lys Ala
 275 280 285
 Asp Val Pro Asp Leu Gln Ser Val Cys Ser Cys Thr Cys Tyr Arg Ser
 290 295 300
 Gln Asp Tyr Gly Gly Arg Ser Val Ala Pro Gln Asn Ser Phe Ser Ala
 305 310 315 320
 Lys Leu Ala Pro His Tyr Phe His Ser Ile Ser Tyr Lys Ile Glu Glu
 325 330 335
 Ile Ser Pro Ser Thr Leu Lys Asn Ser Leu Phe Pro Ser Pro Ile Ser
 340 345 350
 Ser Ile Ser Pro Gly Leu His Ser Phe Thr Asp His Gln Arg Leu Met
 355 360 365
 Lys Arg Arg Lys Ser Val
 370

<210> 195
 <211> 387
 <212> PRT
 <213> Cavia porcellus

<400> 195
 Met Lys Lys Gln Asn Val Arg Thr Leu Ser Leu Ile Ala Cys Thr Phe
 1 5 10 15
 Thr Tyr Leu Leu Val Gly Ala Ala Val Phe Asp Ala Leu Glu Ser Asp
 20 25 30
 His Glu Met Arg Glu Glu Glu Lys Leu Lys Ala Glu Glu Ile Arg Ile
 35 40 45
 Arg Gly Lys Tyr Asn Ile Ser Thr Glu Asp Tyr Arg Gln Leu Glu Leu

50 55 60

Val Ile Leu Gln Ser Glu Pro His Arg Ala Gly Val Gln Trp Lys Phe
65 70 75 80

Ala Gly Ser Phe Tyr Phe Ala Ile Thr Val Ile Thr Thr Ile Gly Tyr
85 90 95

Gly His Ala Ala Pro Gly Thr Asp Ala Gly Lys Ala Phe Cys Met Phe
100 105 110

Tyr Ala Val Leu Gly Ile Pro Leu Thr Leu Val Met Phe Gln Ser Leu
115 120 125

Gly Glu Arg Met Asn Thr Phe Val Arg Tyr Leu Leu Lys Arg Ile Lys
130 135 140

Lys Cys Cys Gly Met Arg Asn Thr Glu Val Ser Met Glu Asn Met Val
145 150 155 160

Thr Val Gly Phe Phe Ser Cys Met Gly Thr Leu Cys Ile Gly Ala Ala
165 170 175

Ala Phe Ser Gln Cys Glu Glu Trp Ser Phe Phe His Ala Tyr Tyr Tyr
180 185 190

Cys Phe Ile Thr Leu Thr Thr Ile Gly Phe Gly Asp Tyr Val Ala Leu
195 200 205

Gln Ser Lys Gly Ala Leu Gln Arg Lys Pro Phe Tyr Val Ala Phe Ser
210 215 220

Phe Met Tyr Ile Leu Val Gly Leu Thr Val Ile Gly Ala Phe Leu Asn
225 230 235 240

Leu Val Val Leu Arg Phe Leu Thr Met Asn Ser Asp Glu Glu Arg Gly
245 250 255

Glu Gly Glu Glu Gly Ala Ala Leu Pro Gly Asn Pro Ser Ser Val Val
260 265 270

Thr His Ile Ser Glu Glu Ala Arg Gln Val Arg Gln Arg Tyr Arg Gly
275 280 285

Glu Gly Gly Asp Leu Gln Ser Val Cys Ser Cys Ala Cys Tyr Arg Ser
290 295 300

Gln Pro Gln Asn Phe Gly His Lys Leu Glu Arg Cys Ala Arg Asp Asn

Ala Ser Gly Asn Tyr Ala Thr Val Ile Ser His Asn Pro Glu Thr Lys
 130 135 140
 Lys Thr Arg Val Lys Leu Pro Ser Gly Ser Lys Lys Val Ile Ser Ser
 145 150 155 160
 Ala Asn Arg Ala Ile Val Gly Val Val Ala Gly Gly Gly Arg Ile Asp
 165 170 175
 Lys Pro Ile Leu Lys Ala Gly Arg Ala Tyr His Lys Tyr Lys Ala Lys
 180 185 190
 Arg Asn Cys Trp Pro Arg Val Arg Gly Val Ala Met Asn Pro Val Glu
 195 200 205
 His Pro Phe Gly Gly Gly Asn His Gln His Ile Gly Lys Pro Ser Thr
 210 215 220
 Ile Arg Arg Asp Ala Pro Ala Gly Arg Lys Val Gly Leu Ile Ala Ala
 225 230 235 240
 Arg Arg Thr Gly Arg Leu Arg Gly Thr Lys Thr Val Gln Glu Lys Glu
 245 250 255
 Asn

<210> 197
 <211> 257
 <212> PRT
 <213> Homo sapiens

<400> 197
 Met Gly Arg Val Ile Arg Gly Gln Arg Lys Gly Ala Gly Ser Val Phe
 1 5 10 15
 Arg Ala His Val Lys His Arg Lys Gly Ala Ala Arg Leu Arg Ala Val
 20 25 30
 Asp Phe Ala Glu Arg His Gly Tyr Ile Lys Gly Ile Val Lys Asp Ile
 35 40 45
 Ile His Asp Pro Gly Arg Gly Ala Pro Leu Ala Lys Val Val Phe Arg
 50 55 60
 Asp Pro Tyr Arg Phe Lys Lys Arg Thr Glu Leu Phe Ile Ala Ala Glu
 65 70 75 80

Gly Ile His Thr Gly Gln Phe Val Tyr Cys Gly Lys Lys Ala Gln Leu
 85 90 95
 Asn Ile Gly Asn Val Leu Pro Val Gly Thr Met Pro Glu Gly Thr Ile
 100 105 110
 Val Cys Cys Leu Glu Glu Lys Pro Gly Asp Arg Gly Lys Leu Ala Arg
 115 120 125
 Ala Ser Gly Asn Tyr Ala Thr Val Ile Ser His Asn Pro Glu Thr Lys
 130 135 140
 Lys Thr Arg Val Lys Leu Pro Ser Gly Ser Lys Lys Val Ile Ser Ser
 145 150 155 160
 Ala Asn Arg Ala Val Val Gly Val Val Ala Gly Gly Gly Arg Ile Asp
 165 170 175
 Lys Pro Ile Leu Lys Ala Gly Arg Ala Tyr His Lys Tyr Lys Ala Lys
 180 185 190
 Arg Asn Cys Trp Pro Arg Val Arg Gly Val Ala Met Asn Pro Val Glu
 195 200 205
 His Pro Phe Gly Gly Gly Asn His Gln His Ile Gly Lys Pro Ser Thr
 210 215 220
 Ile Arg Arg Asp Ala Pro Ala Gly Arg Lys Val Gly Leu Ile Ala Ala
 225 230 235 240
 Arg Arg Thr Gly Arg Leu Arg Gly Thr Lys Thr Val Gln Glu Lys Glu
 245 250 255

Asn

<210> 198

<211> 257

<212> PRT

<213> Homo sapiens

<400> 198

Met Gly Arg Val Ile Arg Gly Gln Arg Lys Gly Ala Gly Ser Val Phe
 1 5 10 15

Arg Ala His Val Lys His Arg Lys Gly Ala Ala Arg Leu Arg Ala Val

	20		25		30
Asp Phe Ala Glu Arg His Gly Tyr Ile Lys Gly Ile Val Lys Asp Ile	35		40		45
Ile His Asp Pro Gly Arg Gly Ala Pro Leu Ala Lys Val Val Phe Arg	50		55		60
Asp Pro Tyr Arg Phe Lys Lys Arg Thr Glu Leu Phe Ile Ala Ala Glu	65		70		75
					80
Gly Ile His Thr Gly Gln Phe Val Tyr Cys Gly Lys Lys Ala Gln Leu		85		90	95
Asn Val Gly Asn Val Leu Pro Val Gly Thr Met Pro Glu Gly Thr Ile	100		105		110
Val Cys Cys Leu Glu Glu Lys Pro Gly Asp Arg Gly Lys Leu Ala Arg	115		120		125
Ala Ser Gly Asn Tyr Ala Thr Val Ile Ser His Asn Pro Glu Thr Lys	130		135		140
Lys Thr Arg Val Lys Leu Pro Ser Gly Ser Lys Lys Val Ile Ser Ser	145		150		155
					160
Ala Asn Arg Ala Val Val Gly Val Val Ala Gly Gly Gly Arg Ile Asp		165		170	175
Lys Pro Ile Leu Lys Ala Gly Arg Ala Tyr His Lys Tyr Lys Ala Lys	180		185		190
Arg Asn Cys Trp Pro Arg Val Arg Gly Val Ala Met Asn Pro Val Glu	195		200		205
His Pro Phe Gly Gly Gly Asn His Gln His Ile Gly Lys Pro Ser Thr	210		215		220
Ile Arg Arg Asp Ala Pro Ala Gly Arg Lys Val Gly Leu Ile Ala Ala	225		230		235
					240
Arg Arg Thr Gly Arg Leu Arg Gly Thr Lys Thr Val Gln Glu Lys Glu		245		250	255
Asn					

<210> 199
 <211> 257
 <212> PRT
 <213> Ictalurus punctatus

<400> 199

Met	Gly	Arg	Val	Ile	Arg	Ala	Gln	Arg	Lys	Gly	Ala	Gly	Ser	Val	Phe
1				5					10					15	
Lys	Ala	His	Val	Lys	His	Arg	Lys	Gly	Ala	Ala	Lys	Leu	Arg	His	Ile
		20						25						30	
Asp	Phe	Ala	Glu	Arg	His	Gly	Tyr	Ile	Lys	Gly	Ile	Val	Lys	Asp	Ile
		35						40						45	
Ile	His	Asp	Pro	Gly	Arg	Gly	Thr	Pro	Leu	Ala	Lys	Val	Val	Phe	Arg
	50						55					60			
Asp	Pro	Tyr	Arg	Phe	Lys	Lys	Arg	Thr	Glu	Leu	Phe	Ile	Ala	Ala	Glu
	65					70				75					80
Gly	Ile	His	Thr	Gly	Gln	Phe	Val	Phe	Cys	Gly	Lys	Lys	Ala	Gln	Leu
				85						90					95
Asn	Ile	Gly	Asn	Val	Leu	Pro	Val	Gly	Val	Met	Pro	Glu	Gly	Thr	Ile
			100						105					110	
Ile	Cys	Cys	Leu	Glu	Glu	Lys	Pro	Gly	Asp	Arg	Gly	Lys	Leu	Ala	Arg
		115						120					125		
Ala	Ser	Gly	Asn	Tyr	Ala	Thr	Val	Ile	Ser	His	Asn	Pro	Glu	Thr	Lys
		130					135					140			
Lys	Ser	Arg	Val	Lys	Leu	Pro	Ser	Gly	Ala	Lys	Lys	Val	Ile	Ser	Ser
	145				150					155					160
Thr	Asn	Arg	Ala	Val	Val	Gly	Val	Val	Ala	Gly	Gly	Gly	Arg	Ile	Asp
				165					170					175	
Lys	Pro	Ile	Leu	Lys	Ala	Gly	Arg	Ala	Tyr	His	Lys	Tyr	Lys	Val	Lys
			180					185						190	
Arg	Asn	Cys	Trp	Pro	Arg	Val	Arg	Gly	Val	Ala	Met	Asn	Pro	Val	Glu
		195						200					205		
His	Pro	Phe	Gly	Gly	Gly	Asn	His	Gln	His	Ile	Gly	Lys	Pro	Ser	Thr
		210					215				220				

Ile Arg Arg Asp Val Pro Ala Gly Arg Lys Val Gly Leu Ile Ala Ala
 225 230 235 240

Arg Arg Thr Gly Arg Leu Arg Gly Thr Lys Thr Val Gln Glu Lys Glu
 245 250 255

Asn

<210> 200

<211> 214

<212> PRT

<213> Homo sapiens

<400> 200

His Glu Glu Asp Ile Ile His Asp Pro Gly Arg Gly Ala Pro Leu Ala
 1 5 10 15

Lys Val Val Phe Arg Asp Pro Tyr Arg Phe Lys Lys Arg Thr Glu Leu
 20 25 30

Phe Ile Ala Ala Glu Gly Ile His Thr Gly Gln Phe Val Tyr Cys Gly
 35 40 45

Lys Lys Ala Gln Leu Asn Ile Gly Asn Val Leu Pro Val Gly Thr Met
 50 55 60

Pro Glu Gly Thr Ile Val Cys Cys Leu Glu Glu Lys Pro Gly Asp Arg
 65 70 75 80

Gly Lys Leu Ala Arg Ala Ser Gly Asn Tyr Ala Thr Val Ile Ser His
 85 90 95

Asn Pro Glu Thr Lys Lys Thr Arg Val Lys Leu Pro Ser Gly Ser Lys
 100 105 110

Lys Val Ile Ser Ser Ala Asn Arg Ala Val Val Gly Val Val Ala Gly
 115 120 125

Gly Gly Arg Ile Asp Lys Pro Ile Leu Lys Ala Gly Arg Ala Tyr His
 130 135 140

Lys Tyr Lys Ala Lys Arg Asn Cys Trp Pro Arg Val Arg Gly Val Ala
 145 150 155 160

Met Asn Pro Val Glu His Pro Phe Gly Gly Gly Asn His Gln His Ile
 165 170 175

Gly Lys Pro Ser Thr Ile Arg Arg Asp Ala Pro Ala Gly Arg Lys Val
180 185 190

Gly Leu Ile Ala Ala Arg Arg Thr Gly Arg Leu Arg Gly Thr Lys Thr
195 200 205

Val Gln Glu Lys Glu Asn
210

<210> 201

<211> 190

<212> PRT

<213> Homo sapiens

<400> 201

Gly Ser Val Phe Arg Ala His Val Lys His Arg Lys Gly Ala Ala Arg
1 5 10 15

Leu Arg Ala Val Asp Phe Ala Glu Arg His Gly Tyr Ile Lys Gly Ile
20 25 30

Val Lys Ala Gln Leu Asn Ile Gly Asn Val Leu Pro Val Gly Thr Met
35 40 45

Pro Glu Gly Thr Ile Val Cys Cys Leu Glu Glu Lys Pro Gly Asp Arg
50 55 60

Gly Lys Leu Ala Arg Ala Ser Gly Asn Tyr Ala Thr Val Ile Ser His
65 70 75 80

Asn Pro Glu Thr Lys Lys Thr Arg Val Lys Leu Pro Ser Gly Ser Lys
85 90 95

Lys Val Ile Ser Ser Ala Asn Arg Ala Val Val Gly Val Val Ala Gly
100 105 110

Gly Gly Arg Ile Asp Lys Pro Ile Leu Lys Ala Gly Arg Ala Tyr His
115 120 125

Lys Tyr Lys Ala Lys Arg Asn Cys Trp Pro Arg Val Arg Gly Val Ala
130 135 140

Met Asn Pro Val Glu His Pro Phe Gly Gly Gly Asn His Gln His Ile
145 150 155 160

Gly Lys Pro Ser Thr Ile Arg Arg Asp Ala Pro Ala Gly Arg Lys Val

	165	170	175
Gly Leu Ile Ala Ala Arg Arg Thr Gly Arg Leu Arg Gly Thr			
	180	185	190
<210> 202			
<211> 229			
<212> PRT			
<213> Artificial Sequence			
<220>			
<223> Description of Artificial Sequence: Ribosomal			
Proteins L2 domain sequence			
<400> 202			
Gly Arg Asn Asn Arg Gly His Ile Thr Arg Arg His Arg Gly Gly Gly			
1	5	10	15
His Lys Arg Leu Tyr Arg Ala Ile Asp Phe Lys Arg Arg Lys Gly Tyr			
	20	25	30
Ile Lys Gly Thr Val Lys Arg Ile Glu Tyr Asp Pro Asn Arg Ser Ala			
	35	40	45
Pro Ile Ala Leu Val Val Tyr Ser Asp Pro Gly Glu Lys Arg Tyr Ile			
	50	55	60
Leu Ala Pro Glu Gly Leu His Val Gly Asp Thr Ile Tyr Ser Gly Lys			
	65	70	75
			80
Asn Ala Thr Ile Lys Ile Gly Asn Val Leu Pro Leu Gly Glu Ile Pro			
	85	90	95
Glu Gly Thr Ile Ile His Asn Val Glu Glu Lys Pro Gly Asp Gly Gly			
	100	105	110
Gln Leu Ala Arg Ala Ala Gly Thr Tyr Ala Gln Ile Leu Ala His Asp			
	115	120	125
Gly Asp Lys Lys Thr Arg Val Lys Leu Pro Ser Gly Glu Lys Arg Arg			
	130	135	140
Val Ser Ser Glu Cys Arg Ala Thr Ile Gly Val Val Ala Asn Gly Gly			
	145	150	155
			160
Arg Ile Asp Lys Pro Leu Gly Lys Ala Gly Arg Ala Arg Trp Leu Gly			
	165	170	175

Lys Arg Pro Arg Val Arg Gly Val Ala Met Asn Pro Val Asp His Pro
180 185 190

His Gly Gly Gly Glu Gly Arg His Pro Ile Gly Arg Lys Ser Pro Val
195 200 205

Thr Pro Trp Gly Lys Lys Ala Leu Gly Ile Ala Thr Arg Arg Thr Lys
210 215 220

Arg Leu Ser Asp Lys
225

<210> 203

<211> 519

<212> PRT

<213> Homo sapiens

<400> 203

Met Ser Val Ser Val Leu Ser Pro Ser Arg Leu Leu Gly Asp Val Ser
1 5 10 15

Gly Ile Leu Gln Ala Ala Ser Leu Leu Ile Leu Leu Leu Leu Ile
20 25 30

Lys Ala Val Gln Leu Tyr Leu His Arg Gln Trp Leu Leu Lys Ala Leu
35 40 45

Gln Gln Phe Pro Cys Pro Pro Ser His Trp Leu Phe Gly His Ile Gln
50 55 60

Glu Leu Gln Gln Asp Gln Glu Leu Gln Arg Ile Gln Lys Trp Val Glu
65 70 75 80

Thr Phe Pro Ser Ala Cys Pro His Trp Leu Trp Gly Gly Lys Val Arg
85 90 95

Val Gln Leu Tyr Asp Pro Asp Tyr Met Lys Val Ile Leu Gly Arg Ser
100 105 110

Asp Pro Lys Ser His Gly Ser Tyr Arg Phe Leu Ala Pro Trp Ile Gly
115 120 125

Tyr Gly Leu Leu Leu Leu Asn Gly Gln Thr Trp Phe Gln His Arg Arg
130 135 140

Met Leu Thr Pro Ala Phe His Tyr Asp Ile Leu Lys Pro Tyr Val Gly

145		150		155		160
Leu Met Ala Asp Ser Val Arg Val Met Leu Asp Lys Trp Glu Glu Leu						
	165		170		175	
Leu Gly Gln Asp Ser Pro Leu Glu Val Phe Gln His Val Ser Leu Met						
	180		185		190	
Thr Leu Asp Thr Ile Met Lys Cys Ala Phe Ser His Gln Gly Ser Ile						
	195		200		205	
Gln Val Asp Arg Asn Ser Gln Ser Tyr Ile Gln Ala Ile Ser Asp Leu						
	210		215		220	
Asn Asn Leu Val Phe Ser Arg Val Arg Asn Ala Phe His Gln Asn Asp						
225		230		235		240
Thr Ile Tyr Ser Leu Thr Ser Ala Gly Arg Trp Thr His Arg Ala Cys						
	245		250		255	
Gln Leu Ala His Gln His Thr Asp Gln Val Ile Gln Leu Arg Lys Ala						
	260		265		270	
Gln Leu Gln Lys Glu Gly Glu Leu Glu Lys Ile Lys Arg Lys Arg His						
	275		280		285	
Leu Asp Phe Leu Asp Ile Leu Leu Leu Ala Lys Met Glu Asn Gly Ser						
	290		295		300	
Ile Leu Ser Asp Lys Asp Leu Arg Ala Glu Val Asp Thr Phe Met Phe						
305		310		315		320
Glu Gly His Asp Thr Thr Ala Ser Gly Ile Ser Trp Ile Leu Tyr Ala						
	325		330		335	
Leu Ala Thr His Pro Lys His Gln Glu Arg Cys Arg Glu Glu Ile His						
	340		345		350	
Ser Leu Leu Gly Asp Gly Ala Ser Ile Thr Trp Asn His Leu Asp Gln						
	355		360		365	
Met Pro Tyr Thr Thr Met Cys Ile Lys Glu Ala Leu Arg Leu Tyr Pro						
	370		375		380	
Pro Val Pro Gly Ile Gly Arg Glu Leu Ser Thr Pro Val Thr Phe Pro						
385		390		395		400
Asp Gly Arg Ser Leu Pro Lys Gly Ile Met Val Leu Leu Ser Ile Tyr						

Ile Val Tyr Asp Pro Asp Tyr Met Lys Val Ile Leu Gly Arg Ser Asp
 100 105 110
 Pro Lys Ala Asn Gly Val Tyr Arg Leu Leu Ala Pro Trp Ile Gly Tyr
 115 120 125
 Gly Leu Leu Leu Leu Asn Gly Gln Pro Trp Phe Gln His Arg Arg Met
 130 135 140
 Leu Thr Pro Ala Phe His Tyr Asp Ile Leu Lys Pro Tyr Val Lys Asn
 145 150 155 160
 Met Ala Asp Ser Ile Arg Leu Met Leu Asp Lys Trp Glu Gln Leu Ala
 165 170 175
 Gly Gln Asp Ser Ser Ile Glu Ile Phe Gln His Ile Ser Leu Met Thr
 180 185 190
 Leu Asp Thr Val Met Lys Cys Ala Phe Ser His Asn Gly Ser Val Gln
 195 200 205
 Val Asp Gly Asn Tyr Lys Ser Tyr Ile Gln Ala Ile Gly Asn Leu Asn
 210 215 220
 Asp Leu Phe His Ser Arg Val Arg Asn Ile Phe His Gln Asn Asp Thr
 225 230 235 240
 Ile Tyr Asn Phe Ser Ser Asn Gly His Leu Phe Asn Arg Ala Cys Gln
 245 250 255
 Leu Ala His Asp His Thr Asp Gly Val Ile Lys Leu Arg Lys Asp Gln
 260 265 270
 Leu Gln Asn Ala Gly Glu Leu Glu Lys Val Lys Lys Lys Arg Arg Leu
 275 280 285
 Asp Phe Leu Asp Ile Leu Leu Leu Ala Arg Met Glu Asn Gly Asp Ser
 290 295 300
 Leu Ser Asp Lys Asp Leu Arg Ala Glu Val Asp Thr Phe Met Phe Glu
 305 310 315 320
 Gly His Asp Thr Thr Ala Ser Gly Val Ser Trp Ile Phe Tyr Ala Leu
 325 330 335
 Ala Thr His Pro Glu His Gln Gln Arg Cys Arg Glu Glu Val Gln Ser
 340 345 350

Val Leu Gly Asp Gly Ser Ser Ile Thr Trp Asp His Leu Asp Gln Ile
 355 360 365
 Pro Tyr Thr Thr Met Cys Ile Lys Glu Ala Leu Arg Leu Tyr Pro Pro
 370 375 380
 Val Pro Gly Ile Val Arg Glu Leu Ser Thr Ser Val Thr Phe Pro Asp
 385 390 395 400
 Gly Arg Ser Leu Pro Lys Gly Ile Gln Val Thr Leu Ser Ile Tyr Gly
 405 410 415
 Leu His His Asn Pro Lys Val Trp Pro Asn Pro Glu Val Phe Asp Pro
 420 425 430
 Ser Arg Phe Ala Pro Asp Ser Pro Arg His Ser His Ser Phe Leu Pro
 435 440 445
 Phe Ser Gly Gly Ala Arg Asn Cys Ile Gly Lys Gln Phe Ala Met Ser
 450 455 460
 Glu Met Lys Val Ile Val Ala Leu Thr Leu Leu Arg Phe Glu Leu Leu
 465 470 475 480
 Pro Asp Pro Thr Lys Val Pro Ile Pro Leu Pro Arg Leu Val Leu Lys
 485 490 495
 Ser Lys Asn Gly Ile Tyr Leu Tyr Leu Lys Lys Leu His
 500 505

 <210> 205
 <211> 509
 <212> PRT
 <213> Mus musculus

 <400> 205
 Met Ser Val Ser Ala Leu Ser Pro Thr Arg Phe Ala Asp Ser Leu Ser
 1 5 10 15
 Gly Phe Leu Gln Val Ala Ser Val Leu Gly Leu Leu Leu Leu Val
 20 25 30
 Lys Ala Val Gln Phe Tyr Leu His Arg Gln Trp Leu Leu Lys Ala Phe
 35 40 45
 Gln Gln Phe Pro Ser Pro Pro Phe His Trp Phe Phe Gly His Glu Lys
 50 55 60

Phe Lys Gly Asp Gln Glu Leu Gln Glu Ile Val Ser Cys Ile Glu Asn
 65 70 75 80

Phe Pro Ser Ala Phe Pro Arg Trp Phe Trp Gly Ser Lys Ala Tyr Leu
 85 90 95

Thr Val Tyr Asp Pro Asp Tyr Met Lys Val Ile Leu Gly Arg Ser Asp
 100 105 110

Pro Lys Ala Asn Gly Ala Tyr Arg Leu Leu Ala Pro Trp Ile Gly Tyr
 115 120 125

Gly Leu Leu Leu Leu Asn Gly Gln Pro Trp Phe Gln His Arg Arg Met
 130 135 140

Leu Thr Pro Ala Phe His Tyr Asp Ile Leu Lys Pro Tyr Val Lys Asn
 145 150 155 160

Met Ala Asp Ser Ile Arg Leu Met Leu Asp Lys Trp Glu Arg Leu Ala
 165 170 175

Asp Gln Asp Ser Ser Ile Glu Ile Phe Gln His Ile Ser Leu Met Thr
 180 185 190

Leu Asp Thr Val Met Lys Cys Ala Phe Ser His Lys Gly Ser Val Gln
 195 200 205

Val Asp Gly Asn Tyr Arg Thr Tyr Leu Gln Ala Ile Gly Asp Leu Asn
 210 215 220

Asn Leu Phe His Ser Arg Val Arg Asn Ile Phe His Gln Asn Asp Thr
 225 230 235 240

Ile Tyr Lys Leu Ser Ser Asn Gly Arg Leu Ala Lys Gln Ala Cys Gln
 245 250 255

Leu Ala His Asp His Thr Asp Gly Val Ile Lys Leu Arg Lys Asp Gln
 260 265 270

Leu Gln Asp Glu Gly Glu Leu Glu Lys Ile Lys Lys Lys Arg Arg Leu
 275 280 285

Asp Phe Leu Asp Ile Leu Leu Phe Ala Arg Met Glu Asn Gly Asp Ser
 290 295 300

Met Ser Asp Lys Asp Leu Arg Ala Glu Val Asp Thr Phe Met Phe Glu
 305 310 315 320

Gly His Asp Thr Thr Ala Ser Gly Val Ser Trp Ile Phe Tyr Ala Leu
 325 330 335
 Ala Thr His Pro Asp His Gln Gln Arg Cys Arg Glu Glu Val Gln Ser
 340 345 350
 Leu Leu Gly Asp Gly Ser Ser Ile Thr Trp Asp His Leu Asp Gln Ile
 355 360 365
 Pro Tyr Thr Thr Met Cys Ile Lys Glu Ala Leu Arg Leu Tyr Pro Pro
 370 375 380
 Val Pro Gly Ile Val Arg Glu Leu Ser Thr Ser Val Thr Phe Pro Asp
 385 390 395 400
 Gly Arg Ser Leu Pro Lys Gly Val Gln Val Thr Leu Ser Ile Tyr Gly
 405 410 415
 Leu His His Asn Pro Lys Val Trp Pro Asn Pro Glu Val Phe Asp Pro
 420 425 430
 Ser Arg Phe Ala Pro Asp Ser Pro Arg His Ser His Ser Phe Leu Pro
 435 440 445
 Phe Ser Gly Gly Ala Arg Asn Cys Ile Gly Lys Gln Phe Ala Met Ser
 450 455 460
 Glu Leu Lys Val Ile Val Ala Leu Thr Leu Leu Arg Phe Glu Leu Leu
 465 470 475 480
 Pro Asp Pro Thr Arg Val Pro Met Pro Leu Ala Arg Leu Val Leu Lys
 485 490 495
 Ser Lys Asn Gly Ile Tyr Leu His Leu Lys Lys Leu His
 500 505

<210> 206

<211> 509

<212> PRT

<213> Mus musculus

<400> 206

Met Ser Val Ser Ala Leu Ser Pro Thr Arg Phe Ala Asp Ser Leu Ser
 1 5 10 15

Gly Phe Leu Gln Val Ala Ser Val Leu Gly Leu Leu Leu Leu Val

20	25	30
Lys Ala Val Gln Phe Tyr Leu His Arg Gln Trp Leu Leu Lys Ala Phe		
35	40	45
Gln Gln Phe Pro Ser Pro Pro Phe His Trp Phe Phe Gly His Glu Gln		
50	55	60
Phe Lys Gly Asp His Glu Leu Gln Glu Ile Val Ser Cys Ile Glu Asn		
65	70	75
		80
Phe Pro Ser Ala Phe Pro Arg Trp Phe Trp Gly Ser Lys Ala Tyr Leu		
	85	90
		95
Thr Val Tyr Asp Pro Asp Tyr Met Lys Val Ile Leu Gly Arg Ser Asp		
100	105	110
Pro Lys Ala Asn Gly Ala Tyr Arg Leu Leu Ala Pro Trp Ile Gly Tyr		
115	120	125
Gly Leu Leu Leu Leu Asn Gly Gln Pro Trp Phe Gln His Arg Arg Met		
130	135	140
Leu Thr Pro Ala Phe His Tyr Asp Ile Leu Lys Pro Tyr Val Lys Asn		
145	150	155
		160
Met Ala Asp Ser Ile Arg Leu Met Leu Asp Lys Trp Glu Arg Leu Ala		
	165	170
		175
Asp Gln Asp Ser Ser Ile Glu Ile Phe Gln His Ile Ser Leu Met Thr		
180	185	190
Leu Asp Thr Val Met Lys Cys Ala Phe Ser His Lys Gly Ser Val Gln		
195	200	205
Val Asp Gly Asn Tyr Arg Thr Tyr Leu Gln Ala Ile Gly Asp Leu Asn		
210	215	220
Asn Leu Phe His Ser Arg Val Arg Asn Ile Phe His Gln Asn Asp Thr		
225	230	235
		240
Ile Tyr Lys Leu Ser Ser Asn Gly Arg Leu Ala Lys Gln Ala Cys Gln		
245	250	255
Leu Ala His Asp His Thr Asp Gly Val Ile Lys Leu Arg Lys Asp Gln		
260	265	270
Leu Gln Asp Glu Gly Glu Leu Glu Lys Ile Lys Lys Lys Arg Arg Leu		

275		280		285
Asp Phe Leu Asp Ile Leu Leu Phe Ala Arg Met Glu Asn Gly Asp Ser				
290		295		300
Met Ser Asp Lys Asp Leu Arg Ala Glu Val Asp Thr Phe Met Phe Glu				
305		310		315
				320
Gly His Asp Thr Thr Ala Ser Gly Val Ser Trp Ile Phe Tyr Ala Leu				
		325		330
				335
Ala Thr His Pro Asp His Gln Gln Arg Cys Arg Glu Glu Val Gln Ser				
		340		345
				350
Leu Leu Gly Asp Gly Ser Ser Ile Thr Trp Asp His Leu Asp Gln Ile				
		355		360
				365
Pro Tyr Thr Thr Met Cys Ile Lys Glu Ala Leu Arg Leu Tyr Pro Pro				
		370		375
				380
Val Pro Gly Ile Val Arg Glu Leu Ser Thr Ser Val Thr Phe Pro Asp				
		385		390
				395
				400
Gly Arg Ser Leu Pro Lys Gly Val Gln Val Thr Leu Ser Ile Tyr Gly				
		405		410
				415
Leu His His Asn Pro Lys Val Trp Pro Asn Pro Glu Val Phe Asp Pro				
		420		425
				430
Ser Arg Phe Ala Pro Asp Ser Pro Arg His Ser His Ser Phe Leu Pro				
		435		440
				445
Phe Ser Gly Gly Ala Arg Asn Cys Ile Gly Lys Gln Phe Ala Met Ser				
		450		455
				460
Glu Leu Lys Val Ile Val Ala Leu Thr Leu Leu Arg Phe Glu Leu Leu				
		465		470
				475
				480
Pro Asp Pro Thr Arg Val Pro Met Pro Leu Ala Arg Leu Val Leu Lys				
		485		490
				495
Ser Lys Asn Gly Ile Tyr Leu His Leu Lys Lys Leu His				
		500		505

<210> 207
 <211> 519
 <212> PRT

<213> Homo sapiens

<400> 207

Met	Ser	Val	Ser	Val	Leu	Ser	Pro	Ser	Arg	Leu	Leu	Gly	Asp	Val	Ser
1				5					10					15	
Gly	Ile	Leu	Gln	Ala	Ala	Ser	Leu	Leu	Ile	Leu	Leu	Leu	Leu	Leu	Ile
			20					25					30		
Lys	Ala	Val	Gln	Leu	Tyr	Leu	His	Arg	Gln	Trp	Leu	Leu	Lys	Ala	Leu
		35					40					45			
Gln	Gln	Phe	Pro	Cys	Pro	Pro	Ser	His	Trp	Leu	Phe	Gly	His	Ile	Gln
	50						55				60				
Glu	Leu	Gln	Gln	Asp	Gln	Glu	Leu	Gln	Arg	Ile	Gln	Lys	Trp	Val	Glu
65					70					75					80
Thr	Phe	Pro	Ser	Ala	Cys	Pro	His	Trp	Leu	Trp	Gly	Gly	Lys	Val	Arg
				85					90					95	
Val	Gln	Leu	Tyr	Asp	Pro	Asp	Tyr	Met	Lys	Val	Ile	Leu	Gly	Arg	Ser
			100					105					110		
Asp	Pro	Lys	Ser	His	Gly	Ser	Tyr	Arg	Phe	Leu	Ala	Pro	Trp	Ile	Gly
		115					120					125			
Tyr	Gly	Leu	Leu	Leu	Leu	Asn	Gly	Gln	Thr	Trp	Phe	Gln	His	Arg	Arg
	130					135					140				
Met	Leu	Thr	Pro	Ala	Phe	His	Tyr	Asp	Ile	Leu	Lys	Pro	Tyr	Val	Gly
145					150					155					160
Leu	Met	Ala	Asp	Ser	Val	Arg	Val	Met	Leu	Asp	Lys	Trp	Glu	Glu	Leu
				165					170					175	
Leu	Gly	Gln	Asp	Ser	Pro	Leu	Glu	Val	Phe	Gln	His	Val	Ser	Leu	Met
			180					185					190		
Thr	Leu	Asp	Thr	Ile	Met	Lys	Cys	Ala	Phe	Ser	His	Gln	Gly	Ser	Ile
		195					200					205			
Gln	Val	Asp	Arg	Asn	Ser	Gln	Ser	Tyr	Ile	Gln	Ala	Ile	Ser	Asp	Leu
	210					215					220				
Asn	Asn	Leu	Val	Phe	Ser	Arg	Val	Arg	Asn	Ala	Phe	His	Gln	Asn	Asp
225					230					235					240

Thr	Ile	Tyr	Ser	Leu	Thr	Ser	Ala	Gly	Arg	Trp	Thr	His	Arg	Ala	Cys	245	250	255	
Gln	Leu	Ala	His	Gln	His	Thr	Asp	Gln	Val	Ile	Gln	Leu	Arg	Lys	Ala	260	265	270	
Gln	Leu	Gln	Lys	Glu	Gly	Glu	Leu	Glu	Lys	Ile	Lys	Arg	Lys	Arg	His	275	280	285	
Leu	Asp	Phe	Leu	Asp	Ile	Leu	Leu	Leu	Ala	Lys	Met	Glu	Asn	Gly	Ser	290	295	300	
Ile	Leu	Ser	Asp	Lys	Asp	Leu	Arg	Ala	Glu	Val	Asp	Thr	Phe	Met	Phe	305	310	315	320
Glu	Gly	His	Asp	Thr	Thr	Ala	Ser	Gly	Ile	Ser	Trp	Ile	Leu	Tyr	Ala	325	330	335	
Leu	Ala	Thr	His	Pro	Lys	His	Gln	Glu	Arg	Cys	Arg	Glu	Glu	Ile	His	340	345	350	
Ser	Leu	Leu	Gly	Asp	Gly	Ala	Ser	Ile	Thr	Trp	Asn	His	Leu	Asp	Gln	355	360	365	
Met	Pro	Tyr	Thr	Thr	Met	Cys	Ile	Lys	Glu	Ala	Leu	Arg	Leu	Tyr	Pro	370	375	380	
Pro	Val	Pro	Gly	Ile	Gly	Arg	Glu	Leu	Ser	Thr	Pro	Val	Thr	Phe	Pro	385	390	395	400
Asp	Gly	Arg	Ser	Leu	Pro	Lys	Gly	Ile	Met	Val	Leu	Leu	Ser	Ile	Tyr	405	410	415	
Gly	Leu	His	His	Asn	Pro	Lys	Val	Trp	Pro	Asn	Pro	Glu	Val	Phe	Asp	420	425	430	
Pro	Ser	Arg	Phe	Ala	Pro	Gly	Ser	Ala	Gln	His	Ser	His	Ala	Phe	Leu	435	440	445	
Pro	Phe	Ser	Gly	Gly	Ser	Arg	Asn	Cys	Ile	Gly	Lys	Gln	Phe	Ala	Met	450	455	460	
Asn	Glu	Leu	Lys	Val	Ala	Thr	Ala	Leu	Thr	Leu	Leu	Arg	Phe	Glu	Leu	465	470	475	480
Leu	Pro	Asp	Pro	Thr	Arg	Ile	Pro	Ile	Pro	Ile	Ala	Arg	Leu	Val	Leu	485	490	495	

Lys Ser Lys Asn Gly Ile His Leu Arg Leu Arg Arg Leu Pro Asn Pro
500 505 510

Cys Glu Asp Lys Asp Gln Leu
515

<210> 208
<211> 434
<212> PRT
<213> Homo sapiens

<400> 208
Pro Ala Pro Pro Thr His Trp Phe Leu Gly His Lys Leu Met Glu Lys
1 5 10 15

Tyr Pro Cys Ala Val Pro Leu Trp Val Gly Pro Phe Thr Met Phe Phe
20 25 30

Ser Val His Asp Pro Asp Tyr Ala Lys Ile Leu Leu Lys Arg Gln Gly
35 40 45

Lys Asn Gln Glu Gly Phe Leu Pro Phe Ile Ser Gln Gly Lys Gly Leu
50 55 60

Ala Ala Leu Asp Gly Pro Lys Trp Phe Gln His Arg Arg Leu Leu Thr
65 70 75 80

Pro Gly Phe His Phe Asn Ile Leu Lys Ala Tyr Ile Glu Val Met Ala
85 90 95

His Ser Val Lys Met Met Leu Asn Lys Trp Glu Glu His Ile Ala Gln
100 105 110

Asn Ser Arg Leu Glu Leu Phe Gln His Val Ser Leu Met Thr Leu Asp
115 120 125

Ser Ile Met Lys Cys Ala Phe Ser His Gln Gly Ser Ile Gln Leu Asp
130 135 140

Arg Ser Ser Tyr Leu Lys Ala Val Phe Asn Leu Ser Lys Ile Ser Asn
145 150 155 160

Gln Arg Met Asn Asn Phe Leu His His Asn Asp Leu Val Phe Lys Phe
165 170 175

Ser Ser Gln Gly Gln Ile Phe Ser Lys Phe Asn Gln Glu Leu His Gln
180 185 190

His Leu Glu Lys Val Ile Gln Asp Arg Lys Glu Ser Leu Lys Asp Lys
 195 200 205
 Leu Lys Gln Asp Thr Thr Gln Lys Arg Arg Trp Asp Phe Leu Asp Ile
 210 215 220
 Leu Leu Ser Ala Lys Val Glu Asn Thr Lys Asp Phe Ser Glu Ala Asp
 225 230 235 240
 Leu Gln Ala Glu Val Lys Thr Phe Met Phe Ala Gly His Asp Thr Thr
 245 250 255
 Ser Ser Ala Ile Ser Trp Ile Leu Tyr Cys Leu Ala Lys Tyr Pro Glu
 260 265 270
 His Gln Gln Arg Cys Arg Asp Glu Ile Arg Glu Leu Leu Gly Asp Gly
 275 280 285
 Ser Ser Ile Thr Trp His Leu Ser Gln Met Pro Tyr Thr Thr Met Cys
 290 295 300
 Ile Lys Glu Cys Leu Arg Leu Tyr Ala Pro Val Val Asn Ile Ser Arg
 305 310 315 320
 Leu Leu Asp Lys Pro Ile Thr Phe Pro Asp Gly Arg Ser Leu Pro Ala
 325 330 335
 Gly Ile Thr Val Val Leu Ser Ile Trp Gly Leu His His Asn Pro Ala
 340 345 350
 Val Trp Lys Asn Val Gln Val Phe Asp Pro Leu Arg Phe Ser Gln Glu
 355 360 365
 Asn Ser Asp Gln Arg His Pro Tyr Ala Tyr Leu Pro Phe Ser Ala Gly
 370 375 380
 Ser Arg Asn Cys Ile Gly Gln Glu Phe Ala Met Ile Glu Leu Lys Val
 385 390 395 400
 Thr Ile Ala Leu Ile Leu Leu His Phe Arg Val Thr Pro Asp Pro Thr
 405 410 415
 Arg Pro Leu Thr Phe Pro Asn His Phe Ile Leu Lys Pro Lys Asn Gly
 420 425 430
 Met Tyr

<213> Artificial Sequence

<223> Description of Artificial Sequence: Cytochrome P450 domain sequence

Trp Gly Gln Leu Leu Asp Phe Phe Arg Tyr Leu Pro Gly Ser His Arg
180 185 190

Lys Ala Phe Lys Ala Ala Lys Asp Leu Lys Asp Tyr Leu Asp Lys Leu
 195 200 205
 Ile Glu Glu Arg Arg Glu Thr Leu Glu Pro Gly Asp Pro Arg Asp Phe
 210 215 220
 Leu Asp Ser Leu Leu Ile Glu Ala Lys Arg Glu Gly Gly Ser Glu Leu
 225 230 235 240
 Thr Asp Glu Glu Leu Lys Ala Thr Val Leu Asp Leu Leu Phe Ala Gly
 245 250 255
 Thr Asp Thr Thr Ser Ser Thr Leu Ser Trp Ala Leu Tyr Leu Leu Ala
 260 265 270
 Lys His Pro Glu Val Gln Ala Lys Leu Arg Glu Glu Ile Asp Glu Val
 275 280 285
 Ile Gly Arg Asp Arg Ser Pro Thr Tyr Asp Asp Arg Ala Asn Met Pro
 290 295 300
 Tyr Leu Asp Ala Val Ile Lys Glu Thr Leu Arg Leu His Pro Val Val
 305 310 315 320
 Pro Leu Leu Leu Pro Arg Val Ala Thr Glu Asp Thr Glu Ile Asp Gly
 325 330 335
 Tyr Leu Ile Pro Lys Gly Thr Leu Val Ile Val Asn Leu Tyr Ser Leu
 340 345 350
 His Arg Asp Pro Lys Val Phe Pro Asn Pro Glu Glu Phe Asp Pro Glu
 355 360 365
 Arg Phe Leu Asp Glu Asn Gly Lys Phe Lys Lys Ser Tyr Ala Phe Leu
 370 375 380
 Pro Phe Gly Ala Gly Pro Arg Asn Cys Leu Gly Glu Arg Leu Ala Arg
 385 390 395 400
 Met Glu Leu Phe Leu Phe Leu Ala Thr Leu Leu Gln Arg Phe Glu Leu
 405 410 415
 Glu Leu Val Pro Pro Gly Asp Ile Pro Leu Thr Pro Lys Pro Leu Gly
 420 425 430
 Leu Pro Ser Lys Pro Pro Leu Tyr
 435 440

<210> 210
 <211> 153
 <212> PRT
 <213> Mus musculus

<400> 210
 Met Gly Ser Thr Met Glu Pro Pro Gly Gly Ala Tyr Leu His Leu Gly
 1 5 10 15
 Ala Val Thr Ser Pro Val Gly Thr Ala Arg Met Leu Gln Leu Ala Phe
 20 25 30
 Gly Cys Thr Thr Phe Ser Leu Val Ala His Arg Gly Gly Phe Gly Gly
 35 40 45
 Val Gln Gly Thr Phe Cys Met Ala Ala Trp Gly Phe Cys Phe Ala Phe
 50 55 60
 Ser Val Leu Val Val Ala Cys Glu Phe Thr Lys Leu His Ser Cys Leu
 65 70 75 80
 Arg Leu Ser Trp Gly Asn Phe Thr Ala Ala Phe Ala Met Leu Ala Thr
 85 90 95
 Leu Leu Cys Ala Thr Ala Ala Val Ile Tyr Pro Leu Tyr Phe Thr Arg
 100 105 110
 Leu Glu Cys Pro Pro Glu Pro Ala Gly Cys Met Val Ala Pro Cys Gln
 115 120 125
 Arg Pro Ala Pro Glu Ser Pro Trp Lys Asp Asp Asp Val Met Thr Ala
 130 135 140
 Met Glu Tyr Leu Ser Arg His Pro Thr
 145 150

<210> 211
 <211> 322
 <212> PRT
 <213> Homo sapiens

<400> 211
 Met Pro Val Thr Val Thr Arg Thr Thr Ile Thr Thr Thr Thr Ser
 1 5 10 15
 Ser Ser Gly Leu Gly Ser Pro Met Ile Val Gly Ser Pro Arg Ala Leu

20	25	30
Thr Gln Pro Leu Gly Leu Leu Arg Leu Leu Gln Leu Val Ser Thr Cys		
35	40	45
Val Ala Phe Ser Leu Val Ala Ser Val Gly Ala Trp Thr Gly Ser Met		
50	55	60
Gly Asn Trp Ser Met Phe Thr Trp Cys Phe Cys Phe Ser Val Thr Leu		
65	70	75
		80
Ile Ile Leu Ile Val Glu Leu Cys Gly Leu Gln Ala Arg Phe Pro Leu		
	85	90
		95
Ser Trp Arg Asn Phe Pro Ile Thr Phe Ala Cys Tyr Ala Ala Leu Phe		
100	105	110
Cys Leu Ser Ala Ser Ile Ile Tyr Pro Thr Thr Tyr Val Gln Phe Leu		
115	120	125
Ser His Gly Arg Ser Arg Asp His Ala Ile Ala Ala Thr Phe Phe Ser		
130	135	140
Cys Ile Ala Cys Val Ala Tyr Ala Thr Glu Val Ala Trp Thr Arg Ala		
145	150	155
		160
Arg Pro Gly Glu Ile Thr Gly Tyr Met Ala Thr Val Pro Gly Leu Leu		
	165	170
		175
Lys Val Leu Glu Thr Phe Val Ala Cys Ile Ile Phe Ala Phe Ile Ser		
180	185	190
Asp Pro Asn Leu Tyr Gln His Gln Pro Ala Leu Glu Trp Cys Val Ala		
195	200	205
Val Tyr Ala Ile Cys Phe Ile Leu Ala Ala Ile Ala Ile Leu Leu Asn		
210	215	220
Leu Gly Glu Cys Thr Asn Val Leu Pro Ile Pro Phe Pro Ser Phe Leu		
225	230	235
		240
Ser Gly Leu Ala Leu Leu Ser Val Leu Leu Tyr Ala Thr Ala Leu Val		
245	250	255
Leu Trp Pro Leu Tyr Gln Phe Asp Glu Lys Tyr Gly Gly Gln Pro Arg		
260	265	270
Arg Ser Arg Asp Val Ser Cys Ser Arg Ser His Ala Tyr Tyr Val Cys		

275 280 285
 Ala Trp Asp Arg Arg Leu Ala Val Ala Ile Leu Thr Ala Ile Asn Leu
 290 295 300
 Leu Ala Tyr Val Ala Asp Leu Val His Ser Ala His Leu Val Phe Val
 305 310 315 320
 Lys Val

 <210> 212
 <211> 296
 <212> PRT
 <213> Mus musculus

 <400> 212
 Met Pro Val Thr Val Thr Arg Thr Thr Ile Thr Thr Thr Thr Ser Ser
 1 5 10 15
 Ser Thr Thr Val Gly Ser Ala Arg Ala Leu Thr Gln Pro Leu Gly Leu
 20 25 30
 Leu Arg Leu Leu Gln Leu Ile Ser Thr Cys Val Ala Phe Ser Leu Val
 35 40 45
 Ala Ser Val Gly Ala Trp Thr Gly Pro Met Gly Asn Trp Ala Met Phe
 50 55 60
 Thr Trp Cys Phe Cys Phe Ala Val Thr Leu Ile Ile Leu Ile Val Glu
 65 70 75 80
 Leu Gly Gly Leu Gln Ala His Phe Pro Leu Ser Trp Arg Asn Phe Pro
 85 90 95
 Ile Thr Phe Ala Cys Tyr Ala Ala Leu Phe Cys Leu Ser Ser Ser Ile
 100 105 110
 Ile Tyr Pro Thr Thr Tyr Val Gln Phe Leu Ala His Gly Arg Thr Arg
 115 120 125
 Asp His Ala Ile Ala Ala Thr Thr Phe Ser Cys Val Ala Cys Leu Ala
 130 135 140
 Tyr Ala Thr Glu Val Ala Trp Thr Arg Ala Arg Pro Gly Glu Ile Thr
 145 150 155 160

Gly Tyr Met Ala Thr Val Pro Gly Leu Leu Lys Val Phe Glu Thr Phe
165 170 175

Val Ala Cys Ile Ile Phe Ala Phe Ile Gly Glu Pro Leu Leu Tyr Asn
180 185 190

Gln Lys Pro Ala Leu Glu Trp Cys Val Ala Val Tyr Ala Ile Cys Phe
195 200 205

Ile Leu Ala Gly Val Thr Ile Leu Leu Asn Leu Gly Asp Cys Thr Asn
210 215 220

Val Leu Pro Ile Pro Phe Pro Thr Phe Leu Ser Gly Leu Ala Tyr Ser
225 230 235 240

Leu Phe Ser Phe Thr Pro Leu Pro Ser Ser Ser Gly Pro Ser Thr Asn
245 250 255

Leu Ile Arg Asp Ile Arg Ala Asn Pro Ala Val Gln Trp Ile Gln Ala
260 265 270

Ala Leu Val Val Leu Val Ile Tyr Asn Pro Thr Arg Cys Val Ser Gly
275 280 285

Thr Asp Asp Trp Arg Cys Pro Ser
290 295

<210> 213

<211> 245

<212> PRT

<213> Homo sapiens

<400> 213

Met Thr Leu Val Ile Leu Leu Val Glu Leu Gly Gly Ser Gln Ala Arg
1 5 10 15

Phe Pro Leu Phe Trp Arg Asn Phe Pro Ile Thr Phe Ala Cys Tyr Ala
20 25 30

Ala Leu Leu Cys Leu Ser Ala Ser Ile Ile Tyr Pro Thr Thr Tyr Leu
35 40 45

Gln Phe Leu Ser His Gly Arg Ser Arg Asp His Ala Ile Ala Ala Ile
50 55 60

Val Phe Ser Gly Ile Ala Cys Val Ala Tyr Ala Thr Glu Val Thr Trp
65 70 75 80

Thr Arg Ala Arg Pro Gly Glu Ile Thr Asp Tyr Met Ala Ser Glu Leu
 85 90 95
 Gly Leu Leu Lys Val Leu Glu Thr Phe Val Ala Cys Leu Ile Phe Val
 100 105 110
 Phe Ile Asn Ser Pro Tyr Val Tyr His Asn Arg Pro Ala Leu Glu Trp
 115 120 125
 Cys Val Ala Val Tyr Ala Leu Cys Phe Val Leu Ala Ala Leu Thr Val
 130 135 140
 Leu Leu Ser Leu Gly His Cys Thr Asn Met Leu Pro Ile Arg Phe Pro
 145 150 155 160
 Ser Phe Leu Leu Gly Leu Ala Leu Leu Ser Val Leu Leu Tyr Ala Thr
 165 170 175
 Ala Leu Val Leu Trp Pro Leu Tyr Gln Phe Asn Glu Lys Tyr Gly Val
 180 185 190
 Gln Pro Trp Gln Thr Arg Asp Val Ser Cys Ser Asp Arg Asn Pro Tyr
 195 200 205
 Leu Val Cys Ile Trp Asp Arg Arg Leu Ala Val Thr Asn Leu Thr Ala
 210 215 220
 Val Asn Leu Leu Ala Tyr Val Gly Asp Leu Val Tyr Ser Ala His Leu
 225 230 235 240
 Val Phe Val Lys Val
 245

<210> 214

<211> 331

<212> PRT

<213> Homo sapiens

<400> 214

Met Ala Arg Gln Arg Glu Glu Lys Arg Arg Thr Glu Gln Gly Phe Gly
 1 5 10 15

Leu Lys Cys Ser Arg Leu Ile Ile Leu Pro Asn Ile Arg Ile Ile Tyr
 20 25 30

Lys Phe Arg Ile Tyr Thr Cys Thr Leu Ser Glu Asn Thr Glu Asn Leu

35	40	45
Ala Leu Cys Ser Ser Asn Asn Gln Thr Lys Leu Asn Gln Thr Met Gln		
50	55	60
Met Leu Lys Pro Asp Leu Phe Ser Val Ser Ser Ser Ala Arg Thr Ala		
65	70	75 80
Ala Met Pro Val Thr Val Thr His Pro Thr Val Thr Thr Thr Met Arg		
	85	90 95
Ser Pro Thr Val Val Gly Ser Ser Arg Ala Leu Ile Gln Pro Leu Gly		
100	105	110
Leu Leu Arg Leu Leu Gln Leu Val Ser Thr Cys Val Ala Leu Ser Leu		
115	120	125
Val Ala Ser Cys Phe Cys Phe Ala Met Thr Leu Val Ile Leu Leu Val		
130	135	140
Glu Leu Gly Gly Ser Gln Ala Arg Phe Pro Leu Phe Trp Arg Asn Phe		
145	150	155 160
Pro Ile Thr Phe Ala Cys Tyr Ala Ala Leu Leu Cys Leu Ser Ala Ser		
	165	170 175
Ile Ile Tyr Pro Thr Thr Tyr Leu Gln Phe Leu Ser His Gly Arg Ser		
	180	185 190
Arg Asp His Ala Ile Ala Ala Ile Val Phe Ser Gly Ile Ala Cys Val		
	195	200 205
Ala Tyr Ala Thr Glu Val Thr Trp Thr Arg Ala Arg Pro Gly Glu Ile		
210	215	220
Thr Asp Tyr Met Ala Ser Glu Leu Gly Leu Leu Lys Val Leu Glu Thr		
225	230	235 240
Phe Val Ala Cys Leu Ile Phe Val Phe Ile Asn Ser Pro Tyr Val Tyr		
	245	250 255
His Asn Arg Pro Ala Leu Glu Trp Trp Val Ala Val Tyr Ala Leu Cys		
	260	265 270
Phe Val Leu Ala Ala Leu Thr Ile Leu Leu Ser Leu Gly His Cys Thr		
275	280	285
Asn Met Leu Pro Ile Arg Phe Pro Ser Phe Leu Leu Gly Leu Ala Leu		

290 295 300
 Leu Ser Val Leu Leu Tyr Ala Thr Ala Leu Val Leu Trp Pro Leu Tyr
 305 310 315 320
 Gln Phe Asn Glu Asn Pro Gly Arg Arg Glu Met
 325 330

 <210> 215
 <211> 365
 <212> PRT
 <213> Homo sapiens

 <400> 215
 Met Gly Tyr Cys Gln Gly Val Ser Gln Val Ala Val Val Leu Leu Met
 1 5 10 15
 Phe Pro Lys Glu Lys Glu Ala Phe Leu Ala Leu Ala Gln Leu Leu Thr
 20 25 30
 Ser Lys Asn Leu Pro Asp Thr Val Asp Gly Gln Leu Pro Met Gly Pro
 35 40 45
 His Ser Arg Ala Ser Gln Val Ala Pro Glu Thr Thr Ser Ser Lys Val
 50 55 60
 Asp Arg Gly Val Ser Thr Val Cys Gly Lys Pro Lys Val Val Gly Lys
 65 70 75 80
 Ile Tyr Gly Gly Arg Asp Ala Ala Ala Gly Gln Trp Pro Trp Gln Ala
 85 90 95
 Ser Leu Leu Tyr Trp Gly Ser His Leu Cys Gly Ala Val Leu Ile Asp
 100 105 110
 Ser Cys Trp Leu Val Ser Thr Thr His Cys Phe Leu Lys Thr Ser Ser
 115 120 125
 Ser Phe Ile Leu Ser Ser Gly Arg Glu Phe Pro Gly Pro Cys Val Cys
 130 135 140
 Leu Leu Asn Pro Asp Met Arg Glu Ser Ile Gly Ser Val Cys Ala Gly
 145 150 155 160
 His Leu Gln Gly Phe Ser Ser Val Cys Thr Met Leu Leu Lys Ser Gln
 165 170 175

Ala Pro Lys Asn Tyr Gln Val Leu Leu Gly Asn Ile Gln Leu Tyr His
 180 185 190
 Gln Thr Gln His Thr Gln Lys Met Ser Val His Arg Ile Ile Thr His
 195 200 205
 Pro Asp Phe Glu Lys Leu His Pro Phe Gly Ser Asp Ile Ala Met Leu
 210 215 220
 Gln Leu His Leu Pro Met Asn Phe Thr Ser Tyr Ile Val Pro Val Cys
 225 230 235 240
 Leu Pro Ser Arg Asp Met Gln Leu Pro Met Gln Leu Ser Pro Pro Phe
 245 250 255
 Tyr Leu Gln Glu Gly Lys Gly Asp Ser Gly Gly Pro Leu Val Cys Tyr
 260 265 270
 Leu Pro Ser Ala Trp Val Leu Val Gly Leu Ala Ser Trp Gly Leu Asp
 275 280 285
 Cys Arg His Pro Ala Tyr Pro Ser Ile Phe Thr Arg Val Thr Tyr Phe
 290 295 300
 Ile Asn Trp Ile Asp Lys Ile Met Arg Leu Thr Pro Leu Ser Asp Pro
 305 310 315 320
 Ala Leu Ala Pro His Thr Cys Ser Pro Pro Lys Pro Leu Arg Ala Ala
 325 330 335
 Gly Leu Pro Gly Pro Cys Ala Ala Leu Val Leu Pro Gln Thr Trp Leu
 340 345 350
 Leu Leu Pro Leu Thr Leu Arg Ala Pro Trp Gln Thr Leu
 355 360 365

<210> 216

<211> 148

<212> PRT

<213> Homo sapiens

<400> 216

Cys Gly Lys Pro Lys Val Val Gly Lys Ile Tyr Gly Gly Arg Asp Ala
 1 5 10 15

Ala Ala Gly Gln Trp Pro Trp Gln Ala Ser Leu Leu Tyr Trp Gly Ser
 20 25 30

His Leu Cys Gly Ala Val Leu Ile Asp Ser Cys Trp Leu Val Ser Thr
 35 40 45
 Thr His Cys Phe Leu Asn Lys Ser Gln Ala Pro Lys Asn Tyr Gln Val
 50 55 60
 Leu Leu Gly Asn Ile Gln Leu Tyr His Gln Thr Gln His Thr Gln Lys
 65 70 75 80
 Met Ser Val His Arg Ile Ile Thr His Pro Asp Phe Glu Lys Leu His
 85 90 95
 Pro Phe Gly Ser Asp Ile Ala Met Leu Gln Leu His Leu Pro Met Asn
 100 105 110
 Phe Thr Ser Tyr Ile Val Pro Val Cys Leu Pro Ser Arg Asp Met Gln
 115 120 125
 Leu Pro Ser Asn Val Ser Cys Trp Ile Thr Gly Trp Gly Met Ala Ile
 130 135 140
 Leu Gly Gly Leu
 145

<210> 217
 <211> 367
 <212> PRT
 <213> Mus musculus

<400> 217
 Met Trp Gly Ser Arg Ala Gln Gln Ser Gly Pro Asp Arg Gly Gly Ala
 1 5 10 15
 Cys Leu Leu Ala Ala Phe Leu Leu Cys Phe Ser Leu Leu His Ala Gln
 20 25 30
 Asp Tyr Thr Pro Ser Gln Thr Pro Pro Pro Thr Ser Asn Thr Ser Leu
 35 40 45
 Lys Pro Arg Gly Arg Val Gln Lys Glu Leu Cys Gly Lys Thr Lys Phe
 50 55 60
 Gln Gly Lys Ile Tyr Gly Gly Gln Ile Ala Lys Ala Glu Arg Trp Pro
 65 70 75 80
 Trp Gln Ala Ser Leu Ile Phe Arg Gly Arg His Ile Cys Gly Ala Val

85	90	95
Leu Ile Asp Lys Thr Trp Leu Leu Ser Ala Ala His Cys Phe Gln Arg		
100	105	110
Ser Leu Thr Pro Ser Asp Tyr Arg Ile Leu Leu Gly Tyr Asn Gln Leu		
115	120	125
Ser Asn Pro Ser Asn Tyr Ser Arg Gln Met Thr Val Asn Lys Val Ile		
130	135	140
Leu His Glu Asp Tyr Ser Lys Leu Ser Arg Leu Glu Lys Asn Ile Val		
145	150	155
		160
Leu Ile Gln Leu His His Pro Val Ile Tyr Ser Thr His Ile Phe Pro		
165	170	175
Ala Cys Val Pro Asp Gly Thr Thr Lys Val Ser Pro Asn Asn Leu Cys		
180	185	190
Trp Ile Ser Gly Trp Gly Met Leu Ser Ala Asp Lys Phe Leu Gln Ala		
195	200	205
Pro Phe Pro Leu Leu Asp Ala Glu Val Ser Leu Ile Asp Glu Glu Glu		
210	215	220
Cys Thr Thr Phe Phe Gln Thr Pro Glu Val Ser Ile Thr Glu Tyr Asp		
225	230	235
		240
Val Ile Lys Asp Asp Val Leu Cys Ala Gly Asp Leu Thr Asn Gln Lys		
245	250	255
Ser Ser Cys Arg Gly Asp Ser Gly Gly Pro Leu Val Cys Phe Leu Asn		
260	265	270
Ser Phe Trp Tyr Val Val Gly Leu Ala Asn Trp Asn Gly Ala Cys Leu		
275	280	285
Glu Pro Ile His Ser Pro Asn Ile Phe Thr Lys Val Ser Tyr Phe Ser		
290	295	300
Asp Trp Ile Lys Gln Lys Lys Ala Asn Thr Pro Ala Ala Asp Val Ser		
305	310	315
		320
Ser Ala Pro Leu Glu Glu Met Ala Ser Ser Leu Arg Gly Trp Gly Asn		
325	330	335
Tyr Ser Ala Gly Ile Thr Leu Lys Pro Arg Ile Ser Thr Thr Leu Leu		

Lys Ala Cys Trp Ala Ser Gly Trp Gly Tyr Leu Arg Glu Asp Val Arg
 195 200 205
 Ile Pro Leu Pro Asn Glu Leu Tyr Glu Ala Glu Leu Ile Ile Met Ser
 210 215 220
 Asn Asp Gln Cys Lys Gly Phe Phe Pro Pro Pro Val Pro Gly Ser Ser
 225 230 235 240
 Arg Ser Tyr Tyr Ile Tyr Asp Asp Met Val Cys Ala Ala Asp Tyr Asp
 245 250 255
 Met Ser Lys Ser Ile Cys Ala Gly Asp Ser Gly Gly Pro Leu Val Cys
 260 265 270
 Leu Leu Glu Gly Ser Trp Tyr Val Val Gly Leu Thr Ser Trp Ser Ser
 275 280 285
 Thr Cys Glu Glu Pro Ile Val Ser Pro Ser Val Phe Ala Arg Val Ser
 290 295 300
 Tyr Phe Asp Lys Trp Ile Lys Asp Asn Lys Lys Ser Ser Ser Asn Ser
 305 310 315 320
 Lys Pro Gly Glu Ser Pro His His Pro Gly Ser Pro Glu Asn Glu Asn
 325 330 335
 Pro Glu Gly Asn Asn Lys Asn Gln Gly Thr Val Ile Lys Pro Val Cys
 340 345 350
 Thr Ala Leu Leu Leu Ser Gln Thr Leu Leu Gln Gln Leu Ile
 355 360 365

<210> 219

<211> 389

<212> PRT

<213> *Xenopus laevis*

<400> 219

Met Leu Gln Tyr Leu Ser Phe Val Leu Ile Phe Ile His His Gln Ala
 1 5 10 15

Cys Gly Val Pro Val Ile Ser Asn Arg Ile Val Gly Gly Met Asp Ser
 20 25 30

Lys Arg Gly Glu Trp Pro Trp Gln Ile Ser Leu Ser Tyr Lys Ser Asp
 35 40 45

Ser Ile Cys Gly Gly Ser Leu Leu Thr Asp Ser Trp Val Met Thr Ala
 50 55 60
 Ala His Cys Ile Asp Ser Leu Asp Val Ser Tyr Tyr Thr Val Tyr Leu
 65 70 75 80
 Gly Ala Tyr Gln Leu Ser Ala Pro Asp Asn Ser Thr Val Ser Arg Gly
 85 90 95
 Val Lys Ser Ile Thr Lys His Pro Asp Phe Gln Tyr Glu Gly Ser Ser
 100 105 110
 Gly Asp Ile Ala Leu Ile Glu Leu Glu Lys Pro Val Thr Phe Thr Pro
 115 120 125
 Tyr Ile Leu Pro Ile Cys Leu Pro Ser Gln Asp Val Gln Phe Ala Ala
 130 135 140
 Gly Thr Met Cys Trp Val Thr Gly Trp Gly Asn Ile Gln Glu Gly Thr
 145 150 155 160
 Pro Leu Ile Ser Pro Lys Thr Ile Gln Lys Ala Glu Val Ala Ile Ile
 165 170 175
 Asp Ser Ser Val Cys Gly Thr Met Tyr Glu Ser Ser Leu Gly Tyr Ile
 180 185 190
 Pro Asp Phe Ser Phe Ile Gln Glu Asp Met Val Cys Ala Gly Tyr Lys
 195 200 205
 Glu Gly Arg Ile Asp Ala Cys Gln Gly Asp Ser Gly Gly Pro Leu Val
 210 215 220
 Cys Asn Val Asn Asn Val Trp Leu Gln Leu Gly Ile Val Ser Trp Gly
 225 230 235 240
 Tyr Gly Cys Ala Glu Pro Asn Arg Pro Gly Val Tyr Thr Lys Val Gln
 245 250 255
 Tyr Tyr Gln Asp Trp Leu Lys Thr Asn Val Pro Leu Ile Val Phe Ser
 260 265 270
 Glu Glu Gly Pro Ser Val Ala Pro Ser Ile Gly Pro Ser Ile Ala Pro
 275 280 285
 Ser Phe Gly Pro Ser Leu Gly Pro Arg Gly Val Ala Ser Thr Thr Ile
 290 295 300

Ser Gln Thr Glu Ala Gln Ser Val Asn Ser Ile Glu Ile Asp Lys Thr
305 310 315 320

Asn Ser Thr Thr Ile Phe Glu Thr Glu Ala Met Ser Met Ser Asn Asn
325 330 335

Thr Thr Met Asn Glu Thr Phe Ser Leu Val Ser Ser Thr Ile Ser Thr
340 345 350

Ala Leu Arg Ile Asn Glu Thr Lys Thr Ile Asp Asn Glu Ala Gln Ile
355 360 365

His Ala Cys Ser Leu His Thr Ile Ala Leu Thr Leu Ile Tyr Leu Phe
370 375 380

Ile Arg Phe Phe Val
385

<210> 220

<211> 186

<212> PRT

<213> Homo sapiens

<400> 220

Lys Ile Tyr Gly Gly Arg Asp Ala Ala Ala Gly Gln Trp Pro Trp Gln
1 5 10 15

Ala Ser Leu Leu Tyr Trp Gly Ser His Leu Cys Gly Ala Val Leu Ile
20 25 30

Asp Ser Cys Trp Leu Val Ser Thr Thr His Cys Phe Lys Ser Gln Ala
35 40 45

Pro Lys Asn Tyr Gln Val Leu Leu Gly Asn Ile Gln Leu Tyr His Gln
50 55 60

Thr Gln His Thr Gln Lys Met Ser Val His Arg Ile Ile Thr His Pro
65 70 75 80

Asp Phe Glu Lys Leu His Pro Phe Gly Ser Asp Ile Ala Met Leu Gln
85 90 95

Leu His Leu Pro Met Asn Phe Thr Ser Tyr Ile Val Pro Val Cys Leu
100 105 110

Pro Ser Arg Asp Met Gln Leu Pro Ser Asn Val Ser Cys Trp Ile Thr

115	120	125
Gly Trp Gly Met Leu Thr Glu Asp Leu Cys Ser Gln Gly Asp Ser Gly		
130	135	140
Gly Pro Leu Val Cys Tyr Leu Pro Ser Ala Trp Val Leu Val Gly Leu		
145	150	155 160
Ala Ser Trp Gly Leu Asp Cys Arg His Pro Ala Tyr Pro Ser Ile Phe		
165	170	175
Thr Arg Val Thr Tyr Phe Ile Asn Trp Ile		
180	185	

<210> 221
 <211> 230
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:Trypsin-like
 serine protease domain sequence

<400> 221

Arg Ile Val Gly Gly Ser Glu Ala Asn Ile Gly Ser Phe Pro Trp Gln		
1	5	10 15
Val Ser Leu Gln Tyr Arg Gly Gly Arg His Phe Cys Gly Gly Ser Leu		
20	25	30
Ile Ser Pro Arg Trp Val Leu Thr Ala Ala His Cys Val Tyr Gly Ser		
35	40	45
Ala Pro Ser Ser Ile Arg Val Arg Leu Gly Ser His Asp Leu Ser Ser		
50	55	60
Gly Glu Glu Thr Gln Thr Val Lys Val Ser Lys Val Ile Val His Pro		
65	70	75 80
Asn Tyr Asn Pro Ser Thr Tyr Asp Asn Asp Ile Ala Leu Leu Lys Leu		
85	90	95
Ser Glu Pro Val Thr Leu Ser Asp Thr Val Arg Pro Ile Cys Leu Pro		
100	105	110
Ser Ser Gly Tyr Asn Val Pro Ala Gly Thr Thr Cys Thr Val Ser Gly		
115	120	125

Trp Gly Arg Thr Ser Glu Ser Ser Gly Ser Leu Pro Asp Thr Leu Gln
 130 135 140
 Glu Val Asn Val Pro Ile Val Ser Asn Ala Thr Cys Arg Arg Ala Tyr
 145 150 155 160
 Ser Gly Gly Pro Ala Ile Thr Asp Asn Met Leu Cys Ala Gly Gly Leu
 165 170 175
 Glu Gly Gly Lys Asp Ala Cys Gln Gly Asp Ser Gly Gly Pro Leu Val
 180 185 190
 Cys Asn Asp Pro Arg Trp Val Leu Val Gly Ile Val Ser Trp Gly Ser
 195 200 205
 Tyr Gly Cys Ala Arg Pro Asn Lys Pro Gly Val Tyr Thr Arg Val Ser
 210 215 220
 Ser Tyr Leu Asp Trp Ile
 225 230

<210> 222
 <211> 230
 <212> PRT
 <213> Homo sapiens

<400> 222
 Arg Ile Val Gly Gly Ser Glu Ala Asn Ile Gly Ser Phe Pro Trp Gln
 1 5 10 15
 Val Ser Leu Gln Tyr Arg Gly Gly Arg His Phe Cys Gly Gly Ser Leu
 20 25 30
 Ile Ser Pro Arg Trp Val Leu Thr Ala Ala His Cys Val Tyr Gly Ser
 35 40 45
 Ala Pro Ser Ser Ile Arg Val Arg Leu Gly Ser His Asp Leu Ser Ser
 50 55 60
 Gly Glu Glu Thr Gln Thr Val Lys Val Ser Lys Val Ile Val His Pro
 65 70 75 80
 Asn Tyr Asn Pro Ser Thr Tyr Asp Asn Asp Ile Ala Leu Leu Lys Leu
 85 90 95
 Ser Glu Pro Val Thr Leu Ser Asp Thr Val Arg Pro Ile Cys Leu Pro

Glu Gln Lys Phe Asp Val Lys Lys Ile Ile Val His Pro Asn Tyr Asn
 65 70 75 80
 Pro Asp Thr Asn Asp Ile Ala Leu Leu Lys Leu Lys Ser Pro Val Thr
 85 90 95
 Leu Gly Asp Thr Val Arg Pro Ile Cys Leu Pro Ser Ala Ser Ser Asp
 100 105 110
 Leu Pro Val Gly Thr Thr Cys Ser Val Ser Gly Trp Gly Arg Thr Lys
 115 120 125
 Asn Leu Gly Thr Ser Asp Thr Leu Gln Glu Val Val Val Pro Ile Val
 130 135 140
 Ser Arg Glu Thr Cys Arg Ser Ala Tyr Gly Gly Thr Val Thr Asp Thr
 145 150 155 160
 Met Ile Cys Ala Gly Ala Leu Gly Gly Lys Asp Ala Cys Gln Gly Asp
 165 170 175
 Ser Gly Gly Pro Leu Val Cys Ser Asp Gly Glu Leu Val Gly Ile Val
 180 185 190
 Ser Trp Gly Tyr Gly Cys Ala Val Gly Asn Tyr Pro Gly Val Tyr Thr
 195 200 205
 Arg Val Ser Arg Tyr Leu Asp Trp Ile
 210 215

<210> 224
 <211> 510
 <212> PRT
 <213> Homo sapiens

<400> 224
 Met Asp Glu Lys Thr Lys Lys Ala Glu Glu Met Ala Leu Ser Leu Thr
 1 5 10 15
 Arg Ala Val Ala Gly Gly Asp Glu Gln Val Ala Met Lys Cys Ala Ile
 20 25 30
 Trp Leu Ala Glu Gln Arg Val Pro Leu Ser Val Gln Leu Lys Pro Glu
 35 40 45
 Val Ser Pro Thr Gln Asp Ile Arg Leu Trp Val Ser Val Glu Asp Ala

50 55 60
 Gln Met His Thr Val Thr Ile Trp Leu Thr Val Arg Pro Asp Met Thr
 65 70 75 80
 Val Ala Ser Leu Lys Asp Met Val Phe Leu Asp Tyr Gly Phe Pro Pro
 85 90 95
 Val Leu Gln Gln Trp Val Ile Gly Gln Arg Leu Ala Arg Asp Gln Glu
 100 105 110
 Thr Leu His Ser His Gly Val Arg Gln Asn Gly Asp Ser Ala Tyr Leu
 115 120 125
 Tyr Leu Leu Ser Ala Arg Asn Thr Ser Leu Asn Pro Gln Glu Leu Gln
 130 135 140
 Arg Glu Arg Gln Leu Arg Met Leu Glu Asp Leu Gly Phe Lys Asp Leu
 145 150 155 160
 Thr Leu Gln Pro Arg Gly Pro Leu Glu Pro Gly Pro Pro Lys Pro Gly
 165 170 175
 Val Pro Gln Glu Pro Gly Arg Gly Gln Pro Asp Ala Val Pro Glu Pro
 180 185 190
 Pro Pro Val Gly Trp Gln Cys Pro Gly Cys Thr Phe Ile Asn Lys Pro
 195 200 205
 Thr Arg Pro Gly Cys Glu Met Cys Cys Arg Ala Arg Pro Glu Ala Tyr
 210 215 220
 Gln Val Pro Ala Ser Tyr Gln Pro Asp Glu Glu Glu Arg Ala Arg Leu
 225 230 235 240
 Ala Gly Glu Glu Glu Ala Leu Arg Gln Tyr Gln Gln Arg Lys Gln Gln
 245 250 255
 Gln Gln Glu Gly Asn Tyr Leu Gln His Val Gln Leu Asp Gln Arg Ser
 260 265 270
 Leu Val Leu Asn Thr Glu Pro Ala Glu Cys Pro Val Cys Tyr Ser Val
 275 280 285
 Leu Ala Pro Gly Glu Ala Val Val Leu Arg Glu Cys Leu His Thr Phe
 290 295 300
 Cys Arg Glu Cys Leu Gln Gly Thr Ile Arg Asn Ser Gln Glu Ala Glu

305 310 315 320
 Val Ser Cys Pro Phe Ile Asp Asn Thr Tyr Ser Cys Ser Gly Lys Leu
 325 330 335
 Leu Glu Arg Glu Ile Lys Ala Leu Leu Thr Pro Glu Asp Tyr Gln Arg
 340 345 350
 Phe Leu Asp Leu Gly Ile Ser Ile Ala Glu Asn Arg Ser Ala Phe Ser
 355 360 365
 Tyr His Cys Lys Thr Pro Asp Cys Lys Gly Trp Cys Phe Phe Glu Asp
 370 375 380
 Asp Val Asn Glu Phe Thr Cys Pro Val Cys Phe His Val Asn Cys Leu
 385 390 395 400
 Leu Cys Lys Ala Ile His Glu Gln Met Asn Cys Lys Glu Tyr Gln Glu
 405 410 415
 Asp Leu Ala Leu Arg Ala Gln Asn Asp Val Ala Ala Arg Gln Thr Thr
 420 425 430
 Glu Met Leu Lys Val Met Leu Gln Gln Gly Glu Ala Met Arg Cys Pro
 435 440 445
 Gln Cys Gln Ile Val Val Gln Lys Lys Asp Gly Cys Asp Trp Ile Arg
 450 455 460
 Cys Thr Val Cys His Thr Glu Ile Cys Trp Val Thr Lys Gly Pro Arg
 465 470 475 480
 Trp Gly Pro Gly Gly Pro Gly Asp Thr Ser Gly Gly Cys Arg Cys Arg
 485 490 495
 Val Asn Gly Ile Pro Cys His Pro Ser Cys Gln Asn Cys His
 500 505 510

<210> 225

<211> 500

<212> PRT

<213> Homo sapiens

<400> 225

Met Ala Leu Ser Leu Thr Arg Ala Val Ala Gly Gly Asp Glu Gln Val
 1 5 10 15

Ala Met Lys Cys Ala Ile Trp Leu Ala Glu Gln Arg Val Pro Leu Ser
 20 25 30
 Val Gln Leu Lys Pro Glu Val Ser Pro Thr Gln Asp Ile Arg Leu Trp
 35 40 45
 Val Ser Val Glu Asp Ala Gln Met His Thr Val Thr Ile Trp Leu Thr
 50 55 60
 Val Arg Pro Asp Met Thr Val Ala Ser Leu Lys Asp Met Val Phe Leu
 65 70 75 80
 Asp Tyr Gly Phe Pro Pro Val Leu Gln Gln Trp Val Ile Gly Gln Arg
 85 90 95
 Leu Ala Arg Asp Gln Glu Thr Leu His Ser His Gly Val Arg Gln Asn
 100 105 110
 Gly Asp Ser Ala Tyr Leu Tyr Leu Leu Ser Ala Arg Asn Thr Ser Leu
 115 120 125
 Asn Pro Gln Glu Leu Gln Arg Glu Arg Gln Leu Arg Met Leu Glu Asp
 130 135 140
 Leu Gly Phe Lys Asp Leu Thr Leu Gln Pro Arg Gly Pro Leu Glu Pro
 145 150 155 160
 Gly Pro Pro Lys Pro Gly Val Pro Gln Glu Pro Gly Arg Gly Gln Pro
 165 170 175
 Asp Ala Val Pro Glu Pro Pro Pro Val Gly Trp Gln Cys Pro Gly Cys
 180 185 190
 Thr Phe Ile Asn Lys Pro Thr Arg Pro Gly Cys Glu Met Cys Cys Arg
 195 200 205
 Ala Arg Pro Glu Ala Tyr Gln Val Pro Ala Ser Tyr Gln Pro Asp Glu
 210 215 220
 Glu Glu Arg Ala Arg Leu Ala Gly Glu Glu Glu Ala Leu Arg Gln Tyr
 225 230 235 240
 Gln Gln Arg Lys Gln Gln Gln Gln Glu Gly Asn Tyr Leu Gln His Val
 245 250 255
 Gln Leu Asp Gln Arg Ser Leu Val Leu Asn Thr Glu Pro Ala Glu Cys
 260 265 270

Pro Val Cys Tyr Ser Val Leu Ala Pro Gly Glu Ala Val Val Leu Arg
 275 280 285

Glu Cys Leu His Thr Phe Cys Arg Glu Cys Leu Gln Gly Thr Ile Arg
 290 295 300

Asn Ser Gln Glu Ala Glu Val Ser Cys Pro Phe Ile Asp Asn Thr Tyr
 305 310 315 320

Ser Cys Ser Gly Lys Leu Leu Glu Arg Glu Ile Lys Ala Leu Leu Thr
 325 330 335

Pro Glu Asp Tyr Gln Arg Phe Leu Asp Leu Gly Ile Ser Ile Ala Glu
 340 345 350

Asn Arg Ser Ala Phe Ser Tyr His Cys Lys Thr Pro Asp Cys Lys Gly
 355 360 365

Trp Cys Phe Phe Glu Asp Asp Val Asn Glu Phe Thr Cys Pro Val Cys
 370 375 380

Phe His Val Asn Cys Leu Leu Cys Lys Ala Ile His Glu Gln Met Asn
 385 390 395 400

Cys Lys Glu Tyr Gln Glu Asp Leu Ala Leu Arg Ala Gln Asn Asp Val
 405 410 415

Ala Ala Arg Gln Thr Thr Glu Met Leu Lys Val Met Leu Gln Gln Gly
 420 425 430

Glu Ala Met Arg Cys Pro Gln Cys Gln Ile Val Val Gln Lys Lys Asp
 435 440 445

Gly Cys Asp Trp Ile Arg Cys Thr Val Cys His Thr Glu Ile Cys Trp
 450 455 460

Val Thr Lys Gly Pro Arg Trp Gly Pro Gly Gly Pro Gly Asp Thr Ser
 465 470 475 480

Gly Gly Cys Arg Cys Arg Val Asn Gly Ile Pro Cys His Pro Ser Cys
 485 490 495

Gln Asn Cys His
 500

<210> 226
 <211> 468

<212> PRT

<213> Homo sapiens

<400> 226

Met Gly Thr Ala Thr Pro Asp Gly Arg Glu Asp Gln Glu Arg Leu Trp
1 5 10 15
Val Ser Val Glu Asp Ala Gln Met His Thr Val Thr Ile Trp Leu Thr
20 25 30
Val Arg Pro Asp Met Thr Val Ala Ser Leu Lys Asp Met Val Phe Leu
35 40 45
Asp Tyr Gly Phe Pro Pro Val Leu Gln Gln Trp Val Ile Gly Gln Arg
50 55 60
Leu Ala Arg Asp Gln Glu Thr Leu His Ser His Gly Val Arg Gln Asn
65 70 75 80
Gly Asp Ser Ala Tyr Leu Tyr Leu Leu Ser Ala Arg Asn Thr Ser Leu
85 90 95
Asn Pro Gln Glu Leu Gln Arg Glu Arg Gln Leu Arg Met Leu Glu Asp
100 105 110
Leu Gly Phe Lys Asp Leu Thr Leu Gln Pro Arg Gly Pro Leu Glu Pro
115 120 125
Gly Pro Pro Lys Pro Gly Val Pro Gln Glu Pro Gly Arg Gly Gln Pro
130 135 140
Asp Ala Val Pro Glu Pro Pro Pro Val Gly Trp Gln Cys Pro Gly Cys
145 150 155 160
Thr Phe Ile Asn Lys Pro Thr Arg Pro Gly Cys Glu Met Cys Cys Arg
165 170 175
Ala Arg Pro Glu Ala Tyr Gln Val Pro Ala Ser Tyr Gln Pro Asp Glu
180 185 190
Glu Glu Arg Ala Arg Leu Ala Gly Glu Glu Glu Ala Leu Arg Gln Tyr
195 200 205
Gln Gln Arg Lys Gln Gln Gln Gln Glu Gly Asn Tyr Leu Gln His Val
210 215 220
Gln Leu Asp Gln Arg Ser Leu Val Leu Asn Thr Glu Pro Ala Glu Cys
225 230 235 240

Pro Val Cys Tyr Ser Val Leu Ala Pro Gly Glu Ala Val Val Leu Arg
 245 250 255
 Glu Cys Leu His Thr Phe Cys Arg Glu Cys Leu Gln Gly Thr Ile Arg
 260 265 270
 Asn Ser Gln Glu Ala Glu Val Ser Cys Pro Phe Ile Asp Asn Thr Tyr
 275 280 285
 Ser Cys Ser Gly Lys Leu Leu Glu Arg Glu Ile Lys Ala Leu Leu Thr
 290 295 300
 Pro Glu Asp Tyr Gln Arg Phe Leu Asp Leu Gly Ile Ser Ile Ala Glu
 305 310 315 320
 Asn Arg Ser Ala Phe Ser Tyr His Cys Lys Thr Pro Asp Cys Lys Gly
 325 330 335
 Trp Cys Phe Phe Glu Asp Asp Val Asn Glu Phe Thr Cys Pro Val Cys
 340 345 350
 Phe His Val Asn Cys Leu Leu Cys Lys Ala Ile His Glu Gln Met Asn
 355 360 365
 Cys Lys Glu Tyr Gln Glu Asp Leu Ala Leu Arg Ala Gln Asn Asp Val
 370 375 380
 Ala Ala Arg Gln Thr Thr Glu Met Leu Lys Val Met Leu Gln Gln Gly
 385 390 395 400
 Glu Ala Met Arg Cys Pro Gln Cys Gln Ile Val Val Gln Lys Lys Asp
 405 410 415
 Gly Cys Asp Trp Ile Arg Cys Thr Val Cys His Thr Glu Ile Cys Trp
 420 425 430
 Val Thr Lys Gly Pro Arg Trp Gly Pro Gly Gly Pro Gly Asp Thr Ser
 435 440 445
 Gly Gly Cys Arg Cys Arg Val Asn Gly Ile Pro Cys His Pro Ser Cys
 450 455 460
 Gln Asn Cys His
 465

<210> 227

<211> 498
<212> PRT
<213> Mus musculus

<400> 227

Met Ala Leu Ser Leu Ala Arg Ala Val Ala Gly Gly Asp Glu Gln Ala
1 5 10 15
Ala Ile Lys Tyr Ala Thr Trp Leu Ala Glu Gln Arg Val Pro Leu Arg
20 25 30
Val Gln Val Lys Pro Glu Val Ser Pro Thr Gln Asp Ile Arg Leu Cys
35 40 45
Val Ser Val Glu Asp Ala Tyr Met His Thr Val Thr Ile Trp Leu Thr
50 55 60
Val Arg Pro Asp Met Thr Val Ala Ser Leu Lys Asp Met Val Phe Leu
65 70 75 80
Asp Tyr Gly Phe Pro Pro Ser Leu Gln Gln Trp Val Val Gly Gln Arg
85 90 95
Leu Ala Arg Asp Gln Glu Thr Leu His Ser His Gly Ile Arg Arg Asn
100 105 110
Gly Asp Gly Ala Tyr Leu Tyr Leu Leu Ser Ala Arg Asn Thr Ser Leu
115 120 125
Asn Pro Gln Glu Leu Gln Arg Gln Arg Gln Leu Arg Met Leu Glu Asp
130 135 140
Leu Gly Phe Lys Asp Leu Thr Leu Gln Ser Arg Gly Pro Leu Glu Pro
145 150 155 160
Val Leu Pro Lys Pro Arg Thr Asn Gln Glu Pro Gly Gln Pro Asp Ala
165 170 175
Ala Pro Glu Ser Pro Pro Val Gly Trp Gln Cys Pro Gly Cys Thr Phe
180 185 190
Ile Asn Lys Pro Thr Arg Pro Gly Cys Glu Met Cys Cys Arg Ala Arg
195 200 205
Pro Glu Thr Tyr Gln Ile Pro Ala Ser Tyr Gln Pro Asp Glu Glu Glu
210 215 220
Arg Ala Arg Leu Ala Gly Glu Glu Glu Ala Leu Arg Gln Tyr Gln Gln

485

490

495

Cys His

<210> 228

<211> 498

<212> PRT

<213> Rattus norvegicus

<400> 228

Met Ala Leu Ser Leu Ala Arg Ala Val Thr Gly Gly Asp Glu Gln Ala
 1 5 10 15

Ala Ile Lys Tyr Ala Thr Trp Leu Ala Glu Gln Lys Val Pro Leu Arg
 20 25 30

Val Gln Val Lys Pro Glu Val Ser Pro Thr Gln Asp Ile Arg Leu Cys
 35 40 45

Val Ser Val Glu Asp Ala Tyr Met His Thr Val Thr Ile Trp Leu Thr
 50 55 60

Val Arg Pro Asp Met Thr Val Ala Ser Leu Lys Asp Met Val Phe Leu
 65 70 75 80

Asp Tyr Gly Phe Pro Pro Ser Leu Gln Gln Trp Val Val Gly Gln Arg
 85 90 95

Leu Ala Arg Asp Gln Glu Thr Leu His Ser His Gly Ile Arg Arg Asn
 100 105 110

Gly Asp Ser Ala Tyr Leu Tyr Leu Leu Ser Ala Arg Asn Thr Ser Leu
 115 120 125

Asn Pro Gln Glu Leu Gln Arg Gln Arg Gln Leu Arg Met Leu Glu Asp
 130 135 140

Leu Gly Phe Lys Asp Leu Thr Leu Gln Pro Arg Gly Pro Leu Glu Pro
 145 150 155 160

Val Leu Pro Lys Pro Arg Thr His Gln Glu Thr Gly Gln Pro Asp Ala
 165 170 175

Ala Pro Glu Ser Pro Pro Val Gly Trp Gln Cys Pro Gly Cys Thr Phe
 180 185 190

Ile	Asn	Lys	Pro	Thr	Arg	Pro	Gly	Cys	Glu	Met	Cys	Cys	Arg	Ala	Arg	195	200	205	
Pro	Glu	Ala	Tyr	Gln	Ile	Pro	Ala	Ser	Tyr	Gln	Pro	Asp	Glu	Glu	Glu	210	215	220	
Arg	Ala	Arg	Leu	Ala	Gly	Glu	Glu	Glu	Ala	Leu	Arg	Gln	Tyr	Glu	Gln	225	230	235	240
Arg	Lys	Gln	Gln	Gln	Gln	Glu	Gly	Asn	Tyr	Leu	Gln	His	Val	Gln	Leu	245	250	255	
Glu	Gln	Arg	Ser	Leu	Val	Leu	Asn	Thr	Glu	Pro	Ala	Glu	Cys	Pro	Val	260	265	270	
Cys	Tyr	Ser	Val	Leu	Ala	Pro	Gly	Glu	Ala	Val	Val	Leu	Arg	Glu	Cys	275	280	285	
Leu	His	Thr	Phe	Cys	Arg	Glu	Cys	Leu	Gln	Gly	Thr	Ile	Arg	Asn	Ser	290	295	300	
Gln	Glu	Ala	Glu	Val	Ser	Cys	Pro	Phe	Ile	Asp	Asn	Thr	Tyr	Ser	Cys	305	310	315	320
Pro	Gly	Lys	Leu	Leu	Glu	Arg	Glu	Ile	Arg	Ala	Leu	Leu	Ser	Pro	Glu	325	330	335	
Asp	Tyr	Gln	Arg	Phe	Leu	Asp	Leu	Gly	Val	Ser	Ile	Ala	Glu	Asn	Arg	340	345	350	
Ser	Thr	Leu	Ser	Tyr	His	Cys	Lys	Thr	Pro	Asp	Cys	Arg	Gly	Trp	Cys	355	360	365	
Phe	Phe	Glu	Asp	Asp	Val	Asn	Glu	Phe	Thr	Cys	Pro	Val	Cys	Thr	Arg	370	375	380	
Val	Asn	Cys	Leu	Leu	Cys	Lys	Ala	Ile	His	Glu	Arg	Met	Asn	Cys	Arg	385	390	395	400
Glu	Tyr	Gln	Asp	Asp	Leu	Ala	His	Arg	Ala	Arg	Asn	Asp	Val	Ala	Ala	405	410	415	
Gln	Gln	Thr	Thr	Glu	Met	Leu	Arg	Val	Met	Leu	Gln	Gln	Gly	Glu	Ala	420	425	430	
Met	Tyr	Cys	Pro	Gln	Cys	Arg	Ile	Val	Val	Gln	Lys	Lys	Asp	Gly	Cys	435	440	445	

Asp Trp Ile Arg Cys Thr Val Cys His Thr Glu Ile Cys Trp Val Thr
 450 455 460

Lys Gly Pro Arg Trp Gly Pro Gly Gly Pro Gly Asp Thr Ser Gly Gly
 465 470 475 480

Cys Arg Cys Arg Val Asn Gly Ile Pro Cys His Pro Ser Cys Gln Asn
 485 490 495

Cys His

<210> 229

<211> 32

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: zf-RanBP
 domain sequence

<400> 229

Arg Ala Gly Ser Asp Trp Asp Cys Ile Ser Ser Cys Leu Val Gln Asn
 1 5 10 15

Phe Ala Thr Ser Thr Lys Cys Val Ala Cys Gln Ala Pro Lys Pro Ser
 20 25 30

<210> 230

<211> 29

<212> PRT

<213> Homo sapiens

<400> 230

Pro Val Gly Trp Gln Cys Pro Gly Cys Thr Phe Ile Asn Lys Pro Thr
 1 5 10 15

Arg Pro Gly Cys Glu Met Cys Cys Arg Ala Arg Pro Glu
 20 25

<210> 231

<211> 53

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: zf-C3HC4
domain sequence

<400> 231
Cys Pro Ile Cys Leu Thr Thr Phe Asp Leu Asp Glu Pro Lys Pro Phe
1 5 10 15
Lys Glu Pro Val Leu Leu Pro Cys Gly His Ser Phe Cys Ser Lys Cys
20 25 30
Ile Val Glu Leu Leu Arg Leu Ser Gln Asn Ser Lys Asn Asn Ser Val
35 40 45
Tyr Lys Cys Pro Leu
50

<210> 232
<211> 44
<212> PRT
<213> Homo sapiens

<400> 232
Cys Pro Val Cys Tyr Ser Val Leu Ala Pro Gly Glu Ala Val Val Leu
1 5 10 15
Arg Glu Cys Leu His Thr Phe Cys Arg Glu Cys Leu Gln Gly Thr Ile
20 25 30
Arg Asn Ser Gln Glu Ala Glu Val Ser Cys Pro Phe
35 40

<210> 233
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: zf-C3HC4
domain sequence

<400> 233
Asn Ser Val Tyr Lys Cys Pro Leu Cys

1 5

<210> 234
<211> 8
<212> PRT
<213> Homo sapiens

<400> 234
Asn Glu Phe Thr Cys Pro Val Cys
1 5

<210> 235
<211> 72
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: IBR domain
sequence

<400> 235
Glu Lys Tyr Glu Lys Phe Met Val Arg Ser Tyr Val Glu Lys Asn Pro
1 5 10 15

Asp Leu Lys Trp Cys Pro Gly Pro Asp Cys Ser Tyr Ala Val Arg Leu
20 25 30

Thr Glu Val Ser Ser Ser Thr Glu Leu Ala Glu Pro Pro Arg Val Glu
35 40 45

Cys Lys Lys Pro Ala Cys Gly Thr Ser Phe Cys Phe Lys Cys Gly Ala
50 55 60

Glu Trp His Ala Pro Val Ser Cys
65 70

<210> 236
<211> 61
<212> PRT
<213> Homo sapiens

<400> 236
Gln Arg Phe Leu Asp Leu Gly Ile Ser Ile Ala Glu Asn Arg Ser Ala
1 5 10 15

Phe Ser Tyr His Cys Lys Thr Pro Asp Cys Lys Gly Trp Cys Phe Phe
20 25 30

Glu Asp Asp Val Asn Glu Phe Thr Cys Pro Val Cys Phe His Val Asn
35 40 45

Cys Leu Leu Cys Lys Ala Ile His Glu Gln Met Asn Cys
50 55 60

<210> 237

<211> 61

<212> PRT

<213> Homo sapiens

<400> 237

Thr Ile Trp Leu Thr Val Arg Pro Asp Met Thr Val Ala Ser Leu Lys
1 5 10 15

Asp Met Val Phe Leu Asp Tyr Gly Phe Pro Pro Val Leu Gln Gln Trp
20 25 30

Val Ile Gly Gln Arg Leu Ala Arg Asp Gln Glu Thr Leu His Ser His
35 40 45

Gly Val Arg Gln Asn Gly Asp Ser Ala Tyr Leu Tyr Leu
50 55 60

<210> 238

<211> 60

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Ubiquitin
homologues domain sequence

<400> 238

Thr Ile Thr Leu Glu Val Lys Pro Ser Asp Thr Val Ser Glu Leu Lys
1 5 10 15

Glu Lys Ile Ala Asp Leu Glu Gly Ile Pro Pro Glu Gln Gln Arg Leu
20 25 30

Ile Tyr Lys Gly Lys Val Leu Glu Asp Asp Arg Thr Leu Ala Glu Tyr
35 40 45

Gly Ile Gln Asp Gly Ser Thr Ile His Leu Val Leu
50 55 60

<210> 239
<211> 337
<212> PRT
<213> Homo sapiens

<400> 239
Met Asn Pro Glu Ser Ser Ile Phe Ile Glu Asp Tyr Leu Lys Tyr Phe
1 5 10 15

Gln Asp Gln Val Ser Arg Glu Asn Leu Leu Gln Leu Leu Thr Asp Asp
20 25 30

Glu Ala Trp Asn Gly Phe Val Ala Ala Ala Glu Leu Pro Arg Asp Glu
35 40 45

Ala Asp Glu Leu Arg Lys Ala Leu Asn Lys Leu Ala Ser His Met Val
50 55 60

Met Lys Asp Lys Asn Arg His Asp Lys Asp Gln Gln His Arg Gln Trp
65 70 75 80

Phe Leu Lys Glu Phe Pro Arg Leu Lys Arg Glu Leu Glu Asp His Ile
85 90 95

Arg Lys Leu Arg Ala Leu Ala Glu Glu Val Glu Gln Val His Arg Gly
100 105 110

Thr Thr Ile Ala Asn Val Val Ser Asn Ser Val Gly Thr Thr Ser Gly
115 120 125

Ile Leu Thr Leu Leu Gly Leu Gly Leu Ala Pro Phe Thr Glu Gly Ile
130 135 140

Ser Phe Val Leu Leu Asp Thr Gly Met Gly Leu Gly Ala Ala Ala Ala
145 150 155 160

Val Ala Gly Ile Thr Cys Ser Val Val Glu Leu Val Asn Lys Leu Arg
165 170 175

Ala Arg Ala Gln Ala Arg Asn Leu Asp Gln Ser Gly Thr Asn Val Ala
180 185 190

Lys Val Met Lys Glu Phe Val Gly Gly Asn Thr Pro Asn Val Leu Thr
195 200 205

Leu Val Asp Asn Trp Tyr Gln Val Thr Gln Gly Ile Gly Arg Asn Ile
 210 215 220
 Arg Ala Ile Arg Arg Ala Arg Ala Asn Pro Gln Leu Gly Ala Tyr Ala
 225 230 235 240
 Pro Pro Pro His Val Ile Gly Arg Ile Ser Ala Glu Gly Gly Glu Gln
 245 250 255
 Val Glu Arg Val Val Glu Gly Pro Ala Gln Ala Met Ser Arg Gly Thr
 260 265 270
 Met Ile Val Gly Ala Ala Thr Gly Gly Ile Leu Leu Leu Leu Asp Val
 275 280 285
 Val Ser Leu Ala Tyr Glu Ser Lys His Leu Leu Glu Gly Ala Lys Ser
 290 295 300
 Glu Ser Ala Glu Glu Leu Lys Lys Arg Ala Gln Glu Leu Glu Gly Lys
 305 310 315 320
 Leu Asn Phe Leu Thr Lys Ile His Glu Met Leu Gln Pro Gly Gln Asp
 325 330 335
 Gln

<210> 240
 <211> 337
 <212> PRT
 <213> Homo sapiens

<400> 240
 Met Asn Pro Glu Ser Ser Ile Phe Ile Glu Asp Tyr Leu Lys Tyr Phe
 1 5 10 15
 Gln Asp Gln Val Ser Arg Glu Asn Leu Leu Gln Leu Leu Thr Asp Asp
 20 25 30
 Glu Ala Trp Asn Gly Phe Val Ala Ala Ala Glu Leu Pro Arg Asp Glu
 35 40 45
 Ala Asp Glu Leu Arg Lys Ala Leu Asn Lys Leu Ala Ser His Met Val
 50 55 60
 Met Lys Asp Lys Asn Arg His Asp Lys Asp Gln Gln His Arg Gln Trp

65		70		75		80									
Phe	Leu	Lys	Glu	Phe	Pro	Arg	Leu	Lys	Arg	Glu	Leu	Glu	Asp	His	Ile
				85					90					95	
Arg	Lys	Leu	Arg	Ala	Leu	Ala	Glu	Glu	Val	Glu	Gln	Val	His	Arg	Gly
				100					105					110	
Thr	Thr	Ile	Ala	Asn	Val	Val	Ser	Asn	Ser	Val	Gly	Thr	Thr	Ser	Gly
				115					120					125	
Ile	Leu	Thr	Leu	Leu	Gly	Leu	Gly	Leu	Ala	Pro	Phe	Thr	Glu	Gly	Ile
				130					135					140	
Ser	Phe	Val	Leu	Leu	Asp	Thr	Gly	Met	Gly	Leu	Gly	Ala	Ala	Ala	Ala
				145					150					155	160
Val	Ala	Gly	Ile	Thr	Cys	Ser	Val	Val	Glu	Leu	Val	Asn	Lys	Leu	Arg
				165					170					175	
Ala	Arg	Ala	Gln	Ala	Arg	Asn	Leu	Asp	Gln	Ser	Gly	Thr	Asn	Val	Ala
				180					185					190	
Lys	Val	Met	Lys	Glu	Phe	Val	Gly	Gly	Asn	Thr	Pro	Asn	Val	Leu	Thr
				195					200					205	
Leu	Val	Asp	Asn	Trp	Tyr	Gln	Val	Thr	Gln	Gly	Ile	Gly	Arg	Asn	Ile
				210					215					220	
Arg	Ala	Ile	Arg	Arg	Ala	Arg	Ala	Asn	Pro	Gln	Leu	Gly	Ala	Tyr	Ala
				225					230					235	240
Pro	Pro	Pro	His	Ile	Ile	Gly	Arg	Ile	Ser	Ala	Glu	Gly	Gly	Glu	Gln
				245					250					255	
Val	Glu	Arg	Val	Val	Glu	Gly	Pro	Ala	Gln	Ala	Met	Ser	Arg	Gly	Thr
				260					265					270	
Met	Ile	Val	Gly	Ala	Ala	Thr	Gly	Gly	Ile	Leu	Leu	Leu	Leu	Asp	Val
				275					280					285	
Val	Ser	Leu	Ala	Tyr	Glu	Ser	Lys	His	Leu	Leu	Glu	Gly	Ala	Lys	Ser
				290					295					300	
Glu	Ser	Ala	Glu	Glu	Leu	Lys	Lys	Arg	Ala	Gln	Glu	Leu	Glu	Gly	Lys
				305					310					315	320
Leu	Asn	Phe	Leu	Thr	Lys	Ile	His	Glu	Met	Leu	Gln	Pro	Gly	Gln	Asp

325

330

335

Gln

<210> 241

<211> 279

<212> PRT

<213> Homo sapiens

<400> 241

Leu Ala Ser His Met Val Met Lys Asp Lys Asn Arg His Asp Lys Asp
 1 5 10 15

Gln Gln His Arg Gln Trp Phe Leu Lys Glu Phe Pro Arg Leu Lys Arg
 20 25 30

Glu Leu Glu Asp His Ile Arg Lys Leu Arg Ala Leu Ala Glu Glu Val
 35 40 45

Glu Gln Val His Arg Gly Thr Thr Ile Ala Asn Val Val Ser Asn Ser
 50 55 60

Val Gly Thr Thr Ser Gly Ile Leu Thr Leu Leu Gly Leu Gly Leu Ala
 65 70 75 80

Pro Phe Thr Glu Gly Ile Ser Phe Val Leu Leu Asp Thr Gly Met Gly
 85 90 95

Leu Gly Ala Ala Ala Ala Val Ala Gly Ile Thr Cys Ser Val Val Glu
 100 105 110

Leu Val Asn Lys Leu Arg Ala Arg Ala Gln Ala Arg Asn Leu Asp Gln
 115 120 125

Ser Gly Thr Asn Val Ala Lys Val Met Lys Glu Phe Val Gly Gly Asn
 130 135 140

Thr Pro Asn Val Leu Thr Leu Val Asp Asn Trp Tyr Gln Val Thr Gln
 145 150 155 160

Gly Ile Gly Arg Asn Ile Arg Ala Ile Arg Arg Ala Arg Ala Asn Pro
 165 170 175

Gln Leu Gly Ala Tyr Ala Pro Pro Pro His Ile Ile Gly Arg Ile Ser
 180 185 190

Ala Glu Gly Gly Glu Gln Val Glu Arg Val Val Glu Gly Pro Ala Gln
195 200 205

Ala Met Ser Arg Gly Thr Met Ile Val Gly Ala Ala Thr Gly Gly Ile
210 215 220

Leu Leu Leu Leu Asp Val Val Ser Leu Ala Tyr Glu Ser Lys His Leu
225 230 235 240

Leu Glu Gly Ala Lys Ser Glu Ser Ala Glu Glu Leu Lys Lys Arg Ala
245 250 255

Gln Glu Leu Glu Gly Lys Leu Asn Phe Leu Thr Lys Ile His Glu Met
260 265 270

Leu Gln Pro Gly Gln Asp Gln
275

<210> 242

<211> 414

<212> PRT

<213> Homo sapiens

<400> 242

Met Arg Phe Lys Ser His Thr Val Glu Leu Arg Arg Pro Cys Ser Asp
1 5 10 15

Met Glu Gly Ala Ala Leu Leu Arg Val Ser Val Leu Cys Ile Trp Met
20 25 30

Ser Ala Leu Phe Leu Gly Val Arg Val Arg Ala Glu Glu Ala Gly Ala
35 40 45

Arg Val Gln Gln Asn Val Pro Ser Gly Thr Asp Thr Gly Asp Pro Gln
50 55 60

Ser Lys Pro Leu Gly Asp Trp Ala Ala Gly Thr Met Asp Pro Glu Ser
65 70 75 80

Ser Ile Phe Ile Glu Asp Ala Ile Lys Tyr Phe Lys Glu Lys Val Ser
85 90 95

Thr Gln Asn Leu Leu Leu Leu Leu Thr Asp Asn Glu Ala Trp Asn Gly
100 105 110

Phe Val Ala Ala Ala Glu Leu Pro Arg Asn Glu Ala Asp Glu Leu Arg
115 120 125

Lys Ala Leu Asp Asn Leu Ala Arg Gln Met Ile Met Lys Asp Lys Asn
 130 135 140

Trp His Asp Lys Gly Gln Gln Tyr Arg Asn Trp Phe Leu Lys Glu Phe
 145 150 155 160

Pro Arg Leu Lys Ser Lys Leu Glu Asp Asn Ile Arg Arg Leu Arg Ala
 165 170 175

Leu Ala Asp Gly Val Gln Lys Val His Lys Gly Thr Thr Ile Ala Asn
 180 185 190

Val Val Ser Gly Ser Leu Ser Ile Ser Ser Gly Ile Leu Thr Leu Val
 195 200 205

Gly Met Gly Leu Ala Pro Phe Thr Glu Gly Gly Ser Leu Val Leu Leu
 210 215 220

Glu Pro Gly Met Glu Leu Gly Ile Thr Ala Ala Leu Thr Gly Ile Thr
 225 230 235 240

Ser Ser Thr Ile Asp Tyr Gly Lys Lys Trp Trp Thr Gln Ala Gln Ala
 245 250 255

His Asp Leu Val Ile Lys Ser Leu Asp Lys Leu Lys Glu Val Lys Glu
 260 265 270

Phe Leu Gly Glu Asn Ile Ser Asn Phe Leu Ser Leu Ala Gly Asn Thr
 275 280 285

Tyr Gln Leu Thr Arg Gly Ile Gly Lys Asp Ile Arg Ala Leu Arg Arg
 290 295 300

Ala Arg Ala Asn Leu Gln Ser Val Pro His Ala Ser Ala Ser Arg Pro
 305 310 315 320

Arg Val Thr Glu Pro Ile Ser Ala Glu Ser Gly Glu Gln Val Glu Arg
 325 330 335

Val Asn Glu Pro Ser Ile Leu Glu Met Ser Arg Gly Val Lys Leu Thr
 340 345 350

Asp Val Ala Pro Val Ser Phe Phe Leu Val Leu Asp Val Val Tyr Leu
 355 360 365

Val Tyr Glu Ser Lys His Leu His Glu Gly Ala Lys Ser Glu Thr Ala
 370 375 380

Glu Glu Leu Lys Lys Val Ala Gln Glu Leu Glu Glu Lys Leu Asn Ile
 385 390 395 400

Leu Asn Asn Asn Tyr Lys Ile Leu Gln Ala Asp Gln Glu Leu
 405 410

<210> 243

<211> 398

<212> PRT

<213> Homo sapiens

<400> 243

Met Glu Gly Ala Ala Leu Leu Arg Val Ser Val Leu Cys Ile Trp Met
 1 5 10 15

Ser Ala Leu Phe Leu Gly Val Gly Val Arg Ala Glu Glu Ala Gly Ala
 20 25 30

Arg Val Gln Gln Asn Val Pro Ser Gly Thr Asp Thr Gly Asp Pro Gln
 35 40 45

Ser Lys Pro Leu Gly Asp Trp Ala Ala Gly Thr Met Asp Pro Glu Ser
 50 55 60

Ser Ile Phe Ile Glu Asp Ala Ile Lys Tyr Phe Lys Glu Lys Val Ser
 65 70 75 80

Thr Gln Asn Leu Leu Leu Leu Leu Thr Asp Asn Glu Ala Trp Asn Gly
 85 90 95

Phe Val Ala Ala Ala Glu Leu Pro Arg Asn Glu Ala Asp Glu Leu Arg
 100 105 110

Lys Ala Leu Asp Asn Leu Ala Arg Gln Met Ile Met Lys Asp Lys Asn
 115 120 125

Trp His Asp Lys Gly Gln Gln Tyr Arg Asn Trp Phe Leu Lys Glu Phe
 130 135 140

Pro Arg Leu Lys Ser Glu Leu Glu Asp Asn Ile Arg Arg Leu Arg Ala
 145 150 155 160

Leu Ala Asp Gly Val Gln Lys Val His Lys Gly Thr Thr Ile Ala Asn
 165 170 175

Val Val Ser Gly Ser Leu Ser Ile Ser Ser Gly Ile Leu Thr Leu Val

	180		185		190
Gly Met Gly Leu Ala Pro Phe Thr Glu Gly Gly Ser Leu Val Leu Leu					
	195		200		205
Glu Pro Gly Met Glu Leu Gly Ile Thr Ala Ala Leu Thr Gly Ile Thr					
	210		215		220
Ser Ser Thr Ile Asp Tyr Gly Lys Lys Trp Trp Thr Gln Ala Gln Ala					
	225		230		235 240
His Asp Leu Val Ile Lys Ser Leu Asp Lys Leu Lys Glu Val Lys Glu					
		245		250	255
Phe Leu Gly Glu Asn Ile Ser Asn Phe Leu Ser Leu Ala Gly Asn Thr					
	260		265		270
Tyr Gln Leu Thr Arg Gly Ile Gly Lys Asp Ile Arg Ala Leu Arg Arg					
	275		280		285
Ala Arg Ala Asn Leu Gln Ser Val Pro His Ala Ser Ala Ser Arg Pro					
	290		295		300
Arg Val Thr Glu Pro Ile Ser Ala Glu Ser Gly Glu Gln Val Glu Arg					
	305		310		315 320
Val Asn Glu Pro Ser Ile Leu Glu Met Ser Arg Gly Val Lys Leu Thr					
		325		330	335
Asp Val Ala Pro Val Gly Phe Phe Leu Val Leu Asp Val Val Tyr Leu					
	340		345		350
Val Tyr Glu Ser Lys His Leu His Glu Gly Ala Lys Ser Glu Thr Ala					
	355		360		365
Glu Glu Leu Lys Lys Val Ala Gln Glu Leu Glu Glu Lys Leu Asn Met					
	370		375		380
Leu Asn Asn Asn Tyr Lys Ile Leu Gln Ala Asp Gln Glu Leu					
	385		390		395

<210> 244

<211> 479

<212> PRT

<213> Homo sapiens

<400> 244

Met	Ala	Trp	Asn	Thr	Asn	Leu	Arg	Trp	Arg	Leu	Pro	Leu	Thr	Cys	Leu	1	5	10	15
Leu	Leu	Gln	Val	Ile	Met	Val	Ile	Leu	Phe	Gly	Val	Phe	Val	Arg	Tyr	20	25	30	
Asp	Phe	Glu	Ala	Asp	Ala	His	Trp	Trp	Ser	Glu	Arg	Thr	His	Lys	Asn	35	40	45	
Leu	Ser	Asp	Met	Glu	Asn	Glu	Phe	Tyr	Tyr	Arg	Tyr	Pro	Ser	Phe	Gln	50	55	60	
Asp	Val	His	Val	Met	Val	Phe	Val	Gly	Phe	Gly	Phe	Leu	Met	Thr	Phe	65	70	75	80
Leu	Gln	Arg	Tyr	Gly	Phe	Ser	Ala	Val	Gly	Phe	Asn	Phe	Leu	Leu	Ala	85	90	95	
Ala	Phe	Gly	Ile	Gln	Trp	Ala	Leu	Leu	Met	Gln	Gly	Trp	Phe	His	Phe	100	105	110	
Leu	Gln	Asp	Arg	Tyr	Ile	Val	Val	Gly	Val	Glu	Asn	Leu	Ile	Asn	Ala	115	120	125	
Asp	Phe	Cys	Val	Ala	Ser	Val	Cys	Val	Ala	Phe	Gly	Ala	Val	Leu	Gly	130	135	140	
Lys	Val	Ser	Pro	Ile	Gln	Leu	Leu	Ile	Met	Thr	Phe	Phe	Gln	Val	Thr	145	150	155	160
Leu	Phe	Ala	Val	Asn	Glu	Phe	Ile	Leu	Leu	Asn	Leu	Leu	Lys	Val	Lys	165	170	175	
Asp	Ala	Gly	Gly	Ser	Met	Thr	Ile	His	Thr	Phe	Gly	Ala	Tyr	Phe	Gly	180	185	190	
Leu	Thr	Val	Thr	Arg	Ile	Leu	Tyr	Arg	Arg	Asn	Leu	Glu	Gln	Ser	Lys	195	200	205	
Glu	Arg	Gln	Asn	Ser	Val	Tyr	Gln	Ser	Asp	Leu	Phe	Ala	Met	Ile	Gly	210	215	220	
Thr	Leu	Phe	Leu	Trp	Met	Tyr	Trp	Pro	Ser	Phe	Asn	Ser	Ala	Ile	Ser	225	230	235	240
Tyr	His	Gly	Asp	Ser	Gln	His	Arg	Ala	Ala	Ile	Asn	Thr	Tyr	Cys	Ser	245	250	255	

Leu Ala Ala Cys Val Leu Thr Ser Val Ala Ile Ser Ser Ala Leu His
260 265 270

Lys Lys Gly Lys Leu Asp Met Val His Ile Gln Asn Ala Thr Leu Ala
275 280 285

Gly Gly Val Ala Val Gly Thr Ala Ala Glu Met Met Leu Met Pro Tyr
290 295 300

Gly Ala Leu Ile Ile Gly Phe Val Cys Gly Ile Ile Ser Thr Leu Gly
305 310 315 320

Phe Val Tyr Leu Thr Pro Phe Leu Glu Ser Arg Leu His Ile Gln Asp
325 330 335

Thr Cys Gly Ile Asn Asn Leu His Gly Ile Pro Gly Ile Ile Gly Gly
340 345 350

Ile Val Gly Ala Val Thr Ala Ala Ser Ala Ser Leu Glu Val Tyr Gly
355 360 365

Lys Glu Gly Leu Val His Ser Phe Asp Phe Gln Gly Phe Asn Gly Asp
370 375 380

Trp Thr Ala Arg Thr Gln Gly Lys Phe Gln Ile Tyr Gly Leu Leu Val
385 390 395 400

Thr Leu Ala Met Ala Leu Met Gly Gly Ile Ile Val Gly Leu Ile Leu
405 410 415

Arg Leu Pro Phe Trp Gly Gln Pro Ser Asp Glu Asn Cys Phe Glu Asp
420 425 430

Ala Val Tyr Trp Glu Met Pro Glu Gly Asn Ser Thr Val Tyr Ile Pro
435 440 445

Glu Asp Pro Thr Phe Lys Pro Ser Gly Pro Ser Val Pro Ser Val Pro
450 455 460

Met Val Ser Pro Leu Pro Met Ala Ser Ser Val Pro Leu Val Pro
465 470 475

<210> 245
<211> 498
<212> PRT
<213> Mus musculus

<400> 245

Met Ala Trp Asn Thr Asn Leu Arg Gly Arg Leu Pro Ile Thr Cys Leu
1 5 10 15

Ile Leu Gln Val Thr Met Val Val Leu Phe Gly Val Phe Val Arg Tyr
20 25 30

Asp Ile Gln Ala Asp Ala His Trp Trp Leu Glu Lys Lys Arg Lys Asn
35 40 45

Ile Ser Ser Asp Val Glu Asn Glu Phe Tyr Tyr Arg Tyr Pro Ser Phe
50 55 60

Gln Asp Val His Ala Met Val Phe Val Gly Phe Gly Phe Leu Met Thr
65 70 75 80

Phe Leu Gln Arg Tyr Gly Phe Ser Ala Val Gly Phe Asn Phe Leu Leu
85 90 95

Ala Ala Phe Gly Ile Gln Trp Ala Leu Leu Met Gln Gly Trp Phe His
100 105 110

Tyr Phe Glu Glu Gly His Ile Val Leu Ser Val Glu Asn Ile Ile Gln
115 120 125

Ala Asp Phe Cys Val Ala Ser Ser Cys Val Ala Phe Gly Ala Val Leu
130 135 140

Gly Lys Val Ser Pro Met Gln Leu Leu Ile Met Thr Phe Phe Gln Val
145 150 155 160

Thr Leu Phe Thr Val Asn Glu Phe Ile Leu Leu Asn Leu Ile Glu Ala
165 170 175

Lys Asp Ala Gly Gly Ser Met Thr Ile His Thr Phe Gly Ala Tyr Phe
180 185 190

Gly Leu Thr Val Thr Trp Ile Leu Tyr Arg Lys Asn Leu Asp Gln Ser
195 200 205

Lys Gln Arg Gln Ser Ser Val Tyr His Ser Asp Leu Phe Ala Met Ile
210 215 220

Gly Thr Leu Phe Leu Trp Ile Tyr Trp Pro Ser Phe Asn Ser Ala Ser
225 230 235 240

Ser Phe His Gly Asp Ala Gln His Arg Ala Ala Leu Asn Thr Tyr Leu
245 250 255

Ser Leu Ala Ala Ser Val Leu Thr Thr Val Thr Val Ser Ser Ile Val
 260 265 270

His Lys Lys Gly Lys Leu Asp Met Val His Ile Gln Asn Ala Thr Leu
 275 280 285

Ala Gly Gly Val Gly Val Gly Thr Ala Ala Glu Met Met Leu Thr Pro
 290 295 300

Tyr Gly Ala Leu Ile Val Gly Phe Phe Cys Gly Ile Phe Ser Thr Leu
 305 310 315 320

Gly Phe Ala Tyr Leu Thr Pro Phe Leu Glu Ser Arg Leu Arg Ile Gln
 325 330 335

Asp Thr Cys Gly Ile His Asn Leu His Gly Ile Pro Gly Ile Ile Gly
 340 345 350

Gly Ile Val Gly Ala Val Thr Ala Ala Tyr Ser Ser Pro Asp Val Tyr
 355 360 365

Gly Glu Pro Gly Ile Val His Ser Phe Gly Phe Gly Ser Tyr Lys Met
 370 375 380

Asp Trp Asn Lys Arg Met Gln Gly Arg Ser Gln Ile Phe Gly Leu Leu
 385 390 395 400

Leu Ser Leu Ala Met Ala Leu Val Gly Gly Ile Ile Val Gly Phe Ile
 405 410 415

Leu Lys Leu Pro Phe Trp Gly Gln Ala Ala Asp Glu Asn Cys Phe Glu
 420 425 430

Asp Ser Ile Tyr Trp Glu Val His Glu Glu Val Asn Thr Val Tyr Ile
 435 440 445

Pro Glu Asp Leu Ala His Lys His Ser Thr Ser Leu Val Pro Ala Met
 450 455 460

Pro Leu Val Leu Pro Thr Thr Ser Ala Ser Ile Val Pro Pro Val Pro
 465 470 475 480

Pro Thr Pro Pro Val Ser Leu Ala Thr Ser Ala Pro Ser Ala Ala Leu
 485 490 495

Val His

<210> 246
<211> 459
<212> PRT
<213> Bos taurus

<400> 246

Met	Ile	Trp	Asn	Thr	Asn	Leu	Arg	Trp	Arg	Leu	Pro	Val	Ala	Cys	Leu
1				5					10					15	
Leu	Leu	Glu	Val	Ala	Leu	Ile	Ala	Leu	Phe	Gly	Val	Phe	Val	Arg	Tyr
			20					25						30	
Asp	Met	Asp	Ala	Asp	Pro	His	Trp	Val	Gln	Glu	Lys	Val	Ile	Lys	Asn
		35					40						45		
Leu	Ser	Thr	Asp	Leu	Glu	Asn	Glu	Phe	Tyr	Tyr	Arg	Tyr	Pro	Ser	Phe
	50					55					60				
Gln	Asp	Val	His	Val	Met	Ile	Phe	Val	Gly	Phe	Gly	Phe	Leu	Met	Thr
65					70					75					80
Phe	Leu	Gln	Arg	Tyr	Gly	Tyr	Ser	Ser	Val	Gly	Phe	Asn	Phe	Leu	Ala
			85						90						95
Ala	Phe	Gly	Ile	Gln	Trp	Ala	Leu	Leu	Met	Gln	Gly	Trp	Leu	Gln	Ser
		100						105							110
Phe	Asp	Gly	Arg	Tyr	Ile	Leu	Val	Asp	Leu	Glu	Asn	Leu	Ile	Asn	Ala
		115					120					125			
Asp	Phe	Cys	Val	Gly	Ser	Val	Cys	Val	Ala	Phe	Gly	Ala	Val	Leu	Gly
	130					135					140				
Lys	Val	Ser	Pro	Val	Gln	Leu	Leu	Ile	Met	Thr	Leu	Phe	Gln	Val	Thr
145					150					155					160
Leu	Phe	Ser	Ile	Asn	Glu	Tyr	Ile	Leu	Leu	Asn	Leu	Leu	Glu	Val	Lys
			165						170						175
Asp	Ser	Gly	Gly	Ser	Met	Thr	Ile	His	Ala	Phe	Gly	Ala	Tyr	Phe	Gly
		180						185							190
Leu	Thr	Val	Ala	Trp	Ile	Leu	Tyr	Arg	Pro	Asn	Leu	His	Leu	Ser	Lys
		195						200							205
Glu	Arg	Gln	Ser	Ser	Thr	Tyr	His	Ser	Asp	Leu	Phe	Ala	Met	Ile	Gly

210		215		220											
Thr	Leu	Phe	Leu	Trp	Met	Tyr	Trp	Pro	Ser	Phe	Asn	Ser	Ala	Ile	Ser
225					230					235					240
Asn	His	Gly	Asp	Ala	Gln	His	Arg	Ala	Ala	Ile	Asn	Thr	Tyr	Cys	Ser
				245					250					255	
Leu	Ala	Ala	Cys	Val	Leu	Thr	Ser	Val	Ala	Leu	Ser	Ser	Ala	Leu	His
			260					265					270		
Arg	Lys	Gly	Lys	Leu	Asp	Met	Val	His	Ile	Gln	Asn	Ala	Thr	Leu	Ala
		275					280					285			
Gly	Gly	Val	Gly	Leu	Gly	Thr	Val	Ala	Glu	Leu	Met	Val	Leu	Pro	Phe
	290					295					300				
Gly	Ser	Leu	Ile	Ile	Gly	Phe	Val	Cys	Gly	Ile	Val	Ser	Thr	Leu	Gly
305					310					315					320
Phe	Val	Tyr	Leu	Thr	Pro	Phe	Leu	Glu	Ser	Arg	Leu	His	Ile	Gln	Asp
				325					330					335	
Thr	Cys	Gly	Val	His	Asn	Leu	His	Gly	Ile	Pro	Gly	Ile	Ile	Gly	Gly
			340					345					350		
Ile	Ala	Gly	Ala	Val	Thr	Ala	Ser	Ile	Ala	Asn	Ile	Asp	Leu	Tyr	Gly
		355					360					365			
Glu	Glu	Gly	Leu	Ala	Tyr	Ala	Phe	Gly	Ile	Glu	Arg	Ser	Lys	Leu	Asn
	370					375					380				
Trp	Ser	Pro	Asn	Met	Gln	Gly	Arg	Phe	Gln	Ala	Ala	Gly	Leu	Phe	Val
385				390						395					400
Ser	Leu	Ala	Met	Ala	Leu	Val	Gly	Gly	Val	Ile	Val	Gly	Val	Ile	Leu
			405					410						415	
Arg	Leu	Pro	Phe	Trp	Gly	Gln	Ala	Pro	Asp	Glu	Asn	Cys	Phe	Glu	Asp
		420					425					430			
Ala	Val	Tyr	Trp	Glu	Ile	Pro	Lys	Glu	Pro	Lys	Ser	Thr	Ala	Leu	Arg
	435					440						445			
Ser	Glu	Asp	Ser	Ser	Ile	Lys	Pro	Pro	Glu	Pro					
450					455										

<210> 247

<211> 467

<212> PRT

<213> *Oryzctolagus cuniculus*

<400> 247

Met Ala Trp Asn Thr Asn Leu Arg Trp Arg Leu Pro Leu Leu Cys Leu
1 5 10 15

Val Leu Glu Val Ala Met Val Val Leu Phe Gly Leu Phe Val Arg Tyr
20 25 30

Ser Pro Asp Ala Asp Ser Ser Trp Ser Asn Glu Lys Arg Lys Gly Asn
35 40 45

Ile Thr Ser Asp Leu Glu Asn Glu Phe Tyr Tyr Arg Tyr Pro Ser Phe
50 55 60

Gln Asp Val His Val Met Val Phe Leu Gly Phe Gly Phe Leu Met Thr
65 70 75 80

Phe Leu Gln Arg Tyr Gly Tyr Cys Ala Leu Gly Phe Asn Phe Leu Leu
85 90 95

Ala Ala Leu Gly Val Gln Trp Ala Leu Leu Met Gln Gly Trp Phe Gln
100 105 110

Tyr Thr Lys Asp Arg Leu Ile Leu Leu Gly Ile Lys Asn Leu Ile Asp
115 120 125

Ala Asp Ser Cys Val Ala Ser Val Cys Val Ala Phe Gly Ala Val Leu
130 135 140

Gly Lys Val Ser Pro Val Gln Met Leu Leu Met Thr Phe Phe Gln Val
145 150 155 160

Ala Leu Phe Ser Ala Asn Glu Phe Leu Leu Leu His Val Leu Glu Val
165 170 175

Lys Asp Ala Gly Gly Ser Ile Thr Ile His Ile Phe Gly Ala Tyr Phe
180 185 190

Gly Leu Thr Val Thr Trp Ile Leu Tyr Arg His Asn Leu Asp His Ser
195 200 205

Arg Glu Arg Gln Ser Ser Val Tyr His Ser Asn Leu Phe Ala Met Ile
210 215 220

Gly Thr Leu Phe Leu Trp Ile Tyr Trp Pro Ser Phe Asn Ser Ala Met
 225 230 235 240
 Ser Asn Tyr Gly Asp Ala Gln His Arg Ala Ala Ile Asn Thr Tyr Cys
 245 250 255
 Ser Leu Ala Ala Ser Val Leu Thr Ser Val Ala Met Ser Ser Val Leu
 260 265 270
 His Lys Lys Gly Lys Leu Asp Met Val His Ile Gln Asn Ala Thr Leu
 275 280 285
 Ala Gly Gly Val Gly Val Gly Thr Ala Ala Glu Met Met Leu Met Pro
 290 295 300
 Tyr Gly Ala Leu Ile Val Gly Phe Ile Cys Gly Ala Val Ser Thr Leu
 305 310 315 320
 Gly Phe Val Tyr Leu Thr Pro Phe Leu Glu Ser Arg Leu Arg Ile Gln
 325 330 335
 Asp Thr Cys Gly Ile His Asn Leu His Gly Ile Pro Gly Leu Ile Gly
 340 345 350
 Ala Ile Val Gly Ala Val Thr Ala Ala Tyr Ala Ser Pro Asp Gly Asp
 355 360 365
 Arg Gly Phe Val Tyr Pro Phe Gly Phe His Asn Glu Lys Asp Glu Lys
 370 375 380
 Val Gln Gly Arg Phe Gln Ala Phe Gly Leu Leu Leu Thr Leu Ala Ile
 385 390 395 400
 Ala Met Val Gly Gly Thr Ile Met Gly Leu Ile Leu Lys Leu Pro Phe
 405 410 415
 Trp Gly Gln Ala Met Asp Glu Asp Cys Phe Asp Asp Ser Ile Tyr Trp
 420 425 430
 Glu Met His Glu Glu Lys Ser Ser Ser Pro Glu Asp His Thr His Lys
 435 440 445
 Pro Ser Val Pro Thr Glu Pro Val Glu Gln Pro Thr Ser Ser Ala Thr
 450 455 460
 Leu Ala Pro
 465

<210> 248

<211> 488

<212> PRT

<213> *Oryzias latipes*

<400> 248

Met Gly Asn Cys Cys Glu Ser Ala Ser Asn Phe Phe Gly Pro Gln Lys
1 5 10 15

Asn Thr Asn Val Arg Val Ser Leu Pro Ala Val Cys Phe Val Trp Gln
20 25 30

Ile Ala Met Ile Val Leu Phe Gly Val Phe Ile Arg Tyr Asp Glu Glu
35 40 45

Ser Asp Ala His Trp Val Glu Leu Lys Lys Thr Glu Asn Leu Thr Asp
50 55 60

Leu Gln Asn Glu Phe Tyr Phe Arg Tyr Pro Ser Phe Gln Asp Val His
65 70 75 80

Val Met Ile Phe Val Gly Phe Gly Phe Leu Met Thr Phe Leu Lys Arg
85 90 95

Tyr Ser Phe Ser Ala Val Gly Phe Asn Phe Leu Ile Ala Ala Phe Gly
100 105 110

Leu Gln Trp Ala Leu Leu Met Gln Gly Trp Phe His His Phe Asp Tyr
115 120 125

Ser Thr Gly Lys Ile Tyr Ile Gly Ile Glu Ser Leu Ile Asn Ala Asp
130 135 140

Phe Cys Cys Ala Ala Ser Leu Ile Ala Tyr Gly Ala Ile Leu Gly Lys
145 150 155 160

Val Ser Pro Val Gln Leu Met Val Val Thr Leu Phe Gly Val Thr Leu
165 170 175

Phe Ala Val Glu Glu Tyr Ile Ile Leu Asp Leu Leu His Cys Arg Asp
180 185 190

Ser Gly Gly Ala Met Val Ile His Cys Phe Gly Gly Tyr Tyr Gly Leu
195 200 205

Ala Ile Ser Trp Val Leu Tyr Arg Pro Asn Leu His Arg Ser Lys Arg
210 215 220

Thr Ser Phe Ser Val Val Glu Ser
485

<210> 249
<211> 388
<212> PRT
<213> Homo sapiens

<400> 249
Asn Leu Ser Asp Met Glu Asn Glu Phe Tyr Tyr Arg Tyr Pro Ser Phe
1 5 10 15
Gln Asp Val His Val Met Val Phe Val Gly Phe Gly Phe Leu Met Thr
20 25 30
Phe Leu Gln Arg Tyr Gly Phe Ser Ala Val Gly Phe Asn Phe Leu Leu
35 40 45
Ala Ala Phe Gly Ile Gln Trp Ala Leu Leu Met Gln Gly Trp Phe His
50 55 60
Phe Leu Gln Asp Arg Tyr Ile Val Val Gly Val Glu Asn Leu Ile Asn
65 70 75 80
Ala Asp Phe Cys Val Ala Ser Val Cys Val Ala Phe Gly Ala Val Leu
85 90 95
Gly Lys Val Ser Pro Ile Gln Leu Leu Ile Met Thr Phe Phe Gln Val
100 105 110
Thr Leu Phe Ala Val Asn Glu Phe Ile Leu Leu Asn Leu Leu Lys Val
115 120 125
Lys Asp Ala Gly Gly Ser Met Thr Ile His Thr Phe Gly Ala Tyr Phe
130 135 140
Gly Leu Thr Val Thr Arg Ile Leu Tyr Arg Arg Asn Leu Glu Gln Ser
145 150 155 160
Lys Glu Arg Gln Asn Ser Val Tyr Gln Ser Asp Leu Phe Ala Met Ile
165 170 175
Gly Thr Leu Phe Leu Trp Met Tyr Trp Pro Ser Phe Asn Ser Ala Ile
180 185 190
Ser Tyr His Gly Asp Ser Gln His Arg Ala Ala Ile Asn Thr Tyr Cys

195	200	205
Ser Leu Ala Ala Cys Val Leu Thr Ser Val Ala Ile Ser Ser Ala Leu		
210	215	220
His Lys Lys Gly Lys Leu Asp Met Val His Ile Gln Asn Ala Thr Leu		
225	230	235 240
Ala Gly Gly Val Ala Val Gly Thr Ala Ala Glu Met Met Leu Met Pro		
	245	250 255
Tyr Gly Ala Leu Ile Ile Gly Phe Val Cys Gly Ile Ile Ser Thr Leu		
	260	265 270
Gly Phe Val Tyr Leu Thr Pro Phe Leu Glu Ser Arg Leu His Ile Gln		
	275	280 285
Asp Thr Cys Gly Ile Asn Asn Leu His Gly Ile Pro Gly Ile Ile Gly		
	290	295 300
Gly Ile Val Gly Ala Val Thr Ala Ala Ser Ala Ser Leu Glu Val Tyr		
305	310	315 320
Gly Lys Glu Gly Leu Val His Ser Phe Asp Phe Gln Gly Phe Asn Gly		
	325	330 335
Asp Trp Thr Ala Arg Thr Gln Gly Lys Phe Gln Ile Tyr Gly Leu Leu		
	340	345 350
Val Thr Leu Ala Met Ala Leu Met Gly Gly Ile Ile Val Gly Leu Ile		
	355	360 365
Leu Arg Leu Pro Phe Trp Gly Gln Pro Ser Asp Glu Asn Cys Phe Glu		
	370	375 380
Asp Ala Val Tyr		
385		

<210> 250

<211> 373

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Ammonium
Transporter Family domain sequence

<400> 250

Gly Leu Val Arg Ser Lys Asn Val Leu Asn Ile Leu Tyr Lys Asn Phe
1 5 10 15

Gln Asp Val Ala Ile Gly Val Leu Ala Tyr Trp Gly Phe Gly Tyr Ser
20 25 30

Leu Ala Phe Gly Asp Ser Tyr Phe Ser Gly Phe Ile Gly Asn Leu Gly
35 40 45

Leu Leu Ala Ala Gly Ile Gln Trp Gly Thr Leu Pro Asp Gly Leu Phe
50 55 60

Phe Leu Phe Gln Leu Met Phe Ala Ala Thr Ala Ile Thr Ile Ile Ser
65 70 75 80

Gly Ala Val Ala Glu Arg Ile Lys Phe Ser Ala Tyr Leu Leu Phe Ser
85 90 95

Ala Leu Leu Gly Thr Leu Val Tyr Pro Pro Val Ala His Trp Val Trp
100 105 110

Gly Glu Gly Gly Trp Leu Ala Lys Leu Gly Val Leu Val Asp Phe Ala
115 120 125

Gly Ser Thr Val Val His Ile Phe Gly Gly Tyr Ala Gly Leu Ala Ala
130 135 140

Ala Leu Val Leu Gly Pro Arg Ile Gly Arg Phe Thr Lys Asn Glu Ala
145 150 155 160

Ile Thr Pro His Asn Leu Pro Phe Ala Val Leu Gly Thr Leu Leu Leu
165 170 175

Trp Phe Gly Trp Phe Gly Phe Asn Ala Gly Ser Ala Leu Thr Ala Asp
180 185 190

Gly Arg Ala Arg Ala Ala Ala Val Asn Thr Asn Leu Ala Ala Ala Gly
195 200 205

Gly Ala Leu Thr Ala Leu Leu Ile Ser Arg Leu Lys Thr Gly Lys Pro
210 215 220

Asn Met Leu Gly Leu Ala Asn Gly Ala Leu Ala Gly Leu Val Ala Ile
225 230 235 240

Thr Pro Ala Cys Gly Val Val Ser Pro Trp Gly Ala Leu Ile Ile Gly
245 250 255

Leu Ile Ala Gly Val Leu Ser Val Leu Gly Tyr Lys Leu Lys Glu Lys
 260 265 270

Leu Gly Ile Asp Asp Pro Leu Asp Val Phe Pro Val His Gly Val Gly
 275 280 285

Gly Ile Trp Gly Gly Ile Ala Val Gly Ile Phe Ala Ala Leu Tyr Val
 290 295 300

Asn Thr Ser Gly Ile Tyr Gly Gly Leu Leu Tyr Gly Asn Ser Lys Gln
 305 310 315 320

Leu Gly Val Gln Leu Ile Gly Ile Ala Val Ile Leu Ala Tyr Ala Phe
 325 330 335

Gly Val Thr Phe Ile Leu Gly Leu Leu Leu Gly Leu Thr Leu Gly Leu
 340 345 350

Arg Val Ser Glu Glu Glu Glu Lys Val Gly Leu Asp Leu Ala Glu His
 355 360 365

Gly Glu Thr Ala Tyr
 370

<210> 251
 <211> 446
 <212> PRT
 <213> Homo sapiens

<400> 251
 Met Arg Leu Asp Glu His Asp Phe Leu Gly Gln Phe Ser Cys Ser Leu
 1 5 10 15

Gly Thr Ile Val Ser Ser Lys Lys Ile Thr Arg Pro Leu Leu Leu Leu
 20 25 30

Asn Asp Lys Pro Ala Gly Lys Gly Leu Ile Thr Ile Ala Ala Gln Glu
 35 40 45

Leu Ser Asp Asn Arg Val Ile Thr Leu Ser Leu Ala Gly Arg Arg Leu
 50 55 60

Asp Lys Lys Asp Leu Phe Gly Lys Ser Asp Pro Phe Leu Glu Phe Tyr
 65 70 75 80

Lys Pro Gly Asp Asp Gly Lys Trp Met Leu Val His Arg Thr Glu Val

85	90	95
Ile Lys Tyr Thr Leu Asp Pro Val Trp Lys Pro Phe Thr Val Pro Leu 100 105 110		
Val Ser Leu Cys Asp Gly Asp Met Glu Lys Pro Ile Gln Val Met Cys 115 120 125		
Tyr Asp Tyr Asp Asn Asp Gly Gly His Asp Phe Ile Gly Glu Phe Gln 130 135 140		
Thr Ser Val Ser Gln Met Cys Glu Ala Arg Asp Ser Val Pro Leu Glu 145 150 155 160		
Phe Glu Cys Ile Asn Pro Lys Lys Gln Arg Lys Lys Lys Asn Tyr Lys 165 170 175		
Asn Ser Gly Ile Ile Ile Leu Arg Ser Cys Lys Ile Asn Arg Asp Tyr 180 185 190		
Ser Phe Leu Asp Tyr Ile Leu Gly Gly Cys Gln Leu Met Phe Thr Val 195 200 205		
Gly Ile Asp Phe Thr Ala Ser Asn Gly Asn Pro Leu Asp Pro Ser Ser 210 215 220		
Leu His Tyr Ile Asn Pro Met Gly Thr Asn Glu Tyr Leu Ser Ala Ile 225 230 235 240		
Trp Ala Val Gly Gln Ile Ile Gln Asp Tyr Asp Ser Asp Lys Met Phe 245 250 255		
Pro Ala Leu Gly Phe Gly Ala Gln Leu Pro Pro Asp Trp Lys Val Ser 260 265 270		
His Glu Phe Ala Ile Asn Phe Asn Pro Thr Asn Pro Phe Cys Ser Gly 275 280 285		
Val Asp Gly Ile Ala Gln Ala Tyr Ser Ala Cys Leu Pro His Ile Arg 290 295 300		
Phe Tyr Gly Pro Thr Asn Phe Ser Pro Ile Val Asn His Val Ala Arg 305 310 315 320		
Phe Ala Ala Gln Ala Thr Gln Gln Arg Thr Ala Thr Gln Tyr Phe Ile 325 330 335		
Leu Leu Ile Ile Thr Asp Gly Val Ile Ser Asp Met Glu Glu Thr Arg		

Gly Cys Gln Leu Met Phe Thr Val Gly Ile Asp Phe Thr Ala Ser Asn
 115 120 125
 Gly Asn Pro Leu Asp Pro Ser Ser Leu His Tyr Ile Asn Pro Met Gly
 130 135 140
 Thr Asn Glu Tyr Leu Ser Ala Ile Trp Ala Val Gly Gln Ile Ile Gln
 145 150 155 160
 Asp Tyr Asp Ser Asp Lys Met Phe Pro Ala Leu Gly Phe Gly Ala Gln
 165 170 175
 Leu Pro Pro Asp Trp Lys Val Ser His Glu Phe Ala Ile Asn Phe Asn
 180 185 190
 Pro Thr Asn Pro Phe Cys Ser Gly Val Asp Gly Ile Ala Gln Ala Tyr
 195 200 205
 Ser Ala Cys Leu Pro His Ile Arg Phe Tyr Gly Pro Thr Asn Phe Ser
 210 215 220
 Pro Ile Val Asn His Val Ala Arg Phe Ala Ala Gln Ala Thr Gln Gln
 225 230 235 240
 Arg Thr Ala Thr Gln Tyr Phe Ile Leu Leu Ile Ile Thr Asp Gly Val
 245 250 255
 Ile Ser Asp Met Glu Glu Thr Arg His Ala Val Val Gln Ala Ser Lys
 260 265 270
 Leu Pro Met Ser Ile Ile Ile Val Gly Val Gly Asn Ala Asp Phe Ala
 275 280 285
 Ala Met Glu Phe Leu Asp Gly Asp Ser Arg Met Leu Arg Ser His Thr
 290 295 300
 Gly Glu Glu Ala Ala Arg Asp Ile Val Gln Phe Val Pro Phe Arg Glu
 305 310 315 320
 Phe Arg Asn Ala Ala Lys Glu Thr Leu Ala Lys Ala Val Leu Ala Glu
 325 330 335
 Leu Pro Gln Gln Val Val Gln Tyr Phe Lys His Lys Asn Leu Pro Pro
 340 345 350
 Thr Asn Ser Glu Pro Ala
 355

<210> 253
 <211> 537
 <212> PRT
 <213> Homo sapiens

<400> 253
 Met Ala Ala Gln Cys Val Thr Lys Val Ala Leu Asn Val Ser Cys Ala
 1 5 10 15

 Asn Leu Leu Asp Lys Asp Ile Gly Ser Lys Ser Asp Pro Leu Cys Val
 20 25 30

 Leu Phe Leu Asn Thr Ser Gly Gln Gln Trp Tyr Glu Val Glu Arg Thr
 35 40 45

 Glu Arg Ile Lys Asn Cys Leu Asn Pro Gln Phe Ser Lys Thr Phe Ile
 50 55 60

 Ile Asp Tyr Tyr Phe Glu Val Val Gln Lys Leu Lys Phe Gly Val Tyr
 65 70 75 80

 Asp Ile Asp Asn Lys Thr Ile Glu Leu Ser Asp Asp Asp Phe Leu Gly
 85 90 95

 Glu Cys Glu Cys Thr Leu Gly Gln Ile Val Ser Ser Lys Lys Leu Thr
 100 105 110

 Arg Pro Leu Val Met Lys Thr Gly Arg Pro Ala Gly Lys Gly Ser Ile
 115 120 125

 Thr Ile Ser Ala Glu Glu Ile Lys Asp Asn Arg Val Val Leu Phe Glu
 130 135 140

 Met Glu Ala Arg Lys Leu Asp Asn Lys Asp Leu Phe Gly Lys Ser Asp
 145 150 155 160

 Pro Tyr Leu Glu Phe His Lys Gln Thr Ser Asp Gly Asn Trp Leu Met
 165 170 175

 Val His Arg Thr Glu Val Val Lys Asn Asn Leu Asn Pro Val Trp Arg
 180 185 190

 Pro Phe Lys Ile Ser Leu Asn Ser Leu Cys Tyr Gly Asp Met Asp Lys
 195 200 205

 Thr Ile Lys Val Glu Cys Tyr Asp Tyr Asp Asn Asp Gly Ser His Asp
 210 215 220

Leu Ile Gly Thr Phe Gln Thr Thr Met Thr Lys Leu Lys Glu Ala Ser
 225 230 235 240
 Arg Ser Ser Pro Val Glu Phe Glu Cys Ile Asn Glu Lys Lys Arg Gln
 245 250 255
 Lys Lys Lys Ser Tyr Lys Asn Ser Gly Val Ile Ser Val Lys Gln Cys
 260 265 270
 Glu Ile Thr Val Glu Cys Thr Phe Leu Asp Tyr Ile Met Gly Gly Cys
 275 280 285
 Gln Leu Asn Phe Thr Val Gly Val Asp Phe Thr Gly Ser Asn Gly Asp
 290 295 300
 Pro Arg Ser Pro Asp Ser Leu His Tyr Ile Ser Pro Asn Gly Val Asn
 305 310 315 320
 Glu Tyr Leu Thr Ala Leu Trp Ser Val Gly Leu Val Ile Gln Asp Tyr
 325 330 335
 Asp Ala Asp Lys Met Phe Pro Ala Phe Gly Phe Gly Ala Gln Ile Pro
 340 345 350
 Pro Gln Trp Gln Val Ser His Glu Phe Pro Met Asn Phe Asn Pro Ser
 355 360 365
 Asn Pro Tyr Cys Asn Gly Ile Gln Gly Ile Val Glu Ala Tyr Arg Ser
 370 375 380
 Cys Leu Pro Gln Ile Lys Leu Tyr Gly Pro Thr Asn Phe Ser Pro Ile
 385 390 395 400
 Ile Asn His Val Ala Arg Phe Ala Ala Ala Thr Gln Gln Gln Thr
 405 410 415
 Ala Ser Gln Tyr Phe Val Leu Leu Ile Ile Thr Asp Gly Val Ile Thr
 420 425 430
 Asp Leu Asp Glu Thr Arg Gln Ala Ile Val Asn Ala Ser Arg Leu Pro
 435 440 445
 Met Ser Ile Ile Ile Val Gly Val Gly Gly Ala Asp Phe Ser Ala Met
 450 455 460
 Glu Phe Leu Asp Gly Asp Gly Gly Ser Leu Arg Ser Pro Leu Gly Glu
 465 470 475 480

Val Ala Ile Arg Asp Ile Val Gln Phe Val Pro Phe Arg Gln Phe Gln
485 490 495

Asn Ala Pro Lys Glu Ala Leu Ala Gln Cys Val Leu Ala Glu Ile Pro
500 505 510

Gln Gln Val Val Gly Tyr Phe Asn Thr Tyr Lys Leu Leu Pro Pro Lys
515 520 525

Asn Pro Ala Thr Lys Gln Gln Lys Gln
530 535

<210> 254

<211> 537

<212> PRT

<213> Homo sapiens

<400> 254

Met Ala His Cys Val Thr Leu Val Gln Leu Ser Ile Ser Cys Asp His
1 5 10 15

Leu Ile Asp Lys Asp Ile Gly Ser Lys Ser Asp Pro Leu Cys Val Leu
20 25 30

Leu Gln Asp Val Gly Gly Gly Ser Trp Ala Glu Leu Gly Arg Thr Glu
35 40 45

Arg Val Arg Asn Cys Ser Ser Pro Glu Phe Ser Lys Thr Leu Gln Leu
50 55 60

Glu Tyr Arg Phe Glu Thr Val Gln Lys Leu Arg Phe Gly Ile Tyr Asp
65 70 75 80

Ile Asp Asn Lys Thr Pro Glu Leu Arg Asp Asp Asp Phe Leu Gly Gly
85 90 95

Ala Glu Cys Ser Leu Gly Gln Ile Val Ser Ser Gln Val Leu Thr Leu
100 105 110

Pro Leu Met Leu Lys Pro Gly Lys Pro Ala Gly Arg Gly Thr Ile Thr
115 120 125

Val Ser Ala Gln Glu Leu Lys Asp Asn Arg Val Val Thr Met Glu Val
130 135 140

Glu Ala Arg Asn Leu Asp Lys Lys Asp Phe Leu Gly Lys Ser Asp Pro

145		150		155		160									
Phe	Leu	Glu	Phe	Phe	Arg	Gln	Gly	Asp	Gly	Lys	Trp	His	Leu	Val	Tyr
			165						170					175	
Arg	Ser	Glu	Val	Ile	Lys	Asn	Asn	Leu	Asn	Pro	Thr	Trp	Lys	Arg	Phe
			180					185					190		
Ser	Val	Pro	Val	Gln	His	Phe	Cys	Gly	Gly	Asn	Pro	Ser	Thr	Pro	Ile
		195					200					205			
Gln	Val	Gln	Cys	Ser	Asp	Tyr	Asp	Ser	Asp	Gly	Ser	His	Asp	Leu	Ile
	210					215					220				
Gly	Thr	Phe	His	Thr	Ser	Leu	Ala	Gln	Leu	Gln	Ala	Val	Pro	Ala	Glu
225					230					235					240
Phe	Glu	Cys	Ile	His	Pro	Glu	Lys	Gln	Gln	Lys	Lys	Lys	Ser	Tyr	Lys
			245					250						255	
Asn	Ser	Gly	Thr	Ile	Arg	Val	Lys	Ile	Cys	Arg	Val	Glu	Thr	Glu	Tyr
			260					265					270		
Ser	Phe	Leu	Asp	Tyr	Val	Met	Gly	Gly	Cys	Gln	Ile	Asn	Phe	Thr	Val
		275					280					285			
Gly	Val	Asp	Phe	Thr	Gly	Ser	Asn	Gly	Asp	Pro	Ser	Ser	Pro	Asp	Ser
	290					295					300				
Leu	His	Tyr	Leu	Ser	Pro	Thr	Gly	Val	Asn	Glu	Tyr	Leu	Met	Ala	Leu
305					310					315					320
Trp	Ser	Val	Gly	Ser	Val	Val	Gln	Asp	Tyr	Asp	Ser	Asp	Lys	Leu	Phe
			325					330						335	
Pro	Ala	Phe	Gly	Phe	Gly	Ala	Gln	Val	Pro	Pro	Asp	Trp	Gln	Val	Ser
			340					345					350		
His	Glu	Phe	Ala	Leu	Asn	Phe	Asn	Pro	Ser	Asn	Pro	Tyr	Cys	Ala	Gly
		355					360					365			
Ile	Gln	Gly	Ile	Val	Asp	Ala	Tyr	Arg	Gln	Ala	Leu	Pro	Gln	Val	Arg
	370					375					380				
Leu	Tyr	Gly	Pro	Thr	Asn	Phe	Ala	Pro	Ile	Ile	Asn	His	Val	Ala	Arg
385					390					395					400
Phe	Ala	Ala	Gln	Ala	Ala	His	Gln	Gly	Thr	Ala	Ser	Gln	Tyr	Phe	Met

405 410 415
 Leu Leu Leu Leu Thr Asp Gly Ala Val Thr Asp Val Glu Ala Thr Arg
 420 425 430
 Glu Ala Val Val Arg Ala Ser Asn Leu Pro Met Ser Val Ile Ile Val
 435 440 445
 Gly Val Gly Gly Ala Asp Phe Glu Ala Met Glu Gln Leu Asp Ala Asp
 450 455 460
 Gly Gly Pro Leu His Thr Arg Ser Gly Gln Ala Ala Ala Arg Asp Ile
 465 470 475 480
 Val Gln Phe Val Pro Tyr Arg Arg Phe Gln Asn Ala Pro Arg Glu Ala
 485 490 495
 Leu Ala Gln Thr Val Leu Ala Glu Val Pro Thr Gln Leu Val Ser Tyr
 500 505 510
 Phe Arg Ala Gln Gly Trp Ala Pro Leu Lys Pro Leu Pro Pro Ser Ala
 515 520 525
 Lys Asp Pro Ala Gln Ala Pro Gln Ala
 530 535

 <210> 255
 <211> 454
 <212> PRT
 <213> Mus musculus

 <400> 255
 Met Ala His Cys Val Thr Leu Val Gln Leu Ser Val Ser Cys Glu His
 1 5 10 15
 Leu Ile Asp Lys Asp Ile Gly Ser Lys Ser Asp Pro Leu Cys Val Leu
 20 25 30
 Leu Gln Asp Val Gly Gly Ala Trp Ala Glu Leu Cys Arg Thr Glu Arg
 35 40 45
 Val Arg Asn Cys Ser Ser Pro Glu Phe Ser Lys Thr Leu Gln Ile Glu
 50 55 60
 Tyr His Phe Glu Thr Val Gln Lys Leu Arg Phe Gly Ile Tyr Asp Ile
 65 70 75 80

Asp	Asn	Lys	Thr	Pro	Glu	Leu	Gly	Asp	Asp	Asp	Phe	Leu	Gly	Gly	Ala	85	90	95	
Glu	Cys	Ser	Leu	Gly	Gln	Ile	Val	Ser	Ser	Gln	Thr	Leu	Thr	Leu	Pro	100	105	110	
Leu	Met	Leu	Lys	Pro	Gly	Lys	Pro	Ala	Gly	Arg	Gly	Thr	Ile	Thr	Val	115	120	125	
Ser	Ala	Gln	Glu	Leu	Lys	Asp	Ser	Arg	Val	Val	Thr	Met	Glu	Val	Glu	130	135	140	
Ala	Arg	Asn	Leu	Asp	Lys	Lys	Asp	Phe	Leu	Gly	Lys	Ser	Asp	Pro	Phe	145	150	155	160
Leu	Glu	Phe	Phe	Arg	Gln	Gly	Asp	Gly	Lys	Trp	Gln	Leu	Ala	Tyr	Arg	165	170	175	
Thr	Glu	Val	Val	Lys	Asn	Asn	Leu	Asn	Pro	Thr	Trp	Lys	Arg	Phe	Ser	180	185	190	
Val	Ser	Leu	Gln	His	Phe	Cys	Gly	Gly	Asp	Leu	Ser	Thr	Pro	Ile	Gln	195	200	205	
Val	Arg	Cys	Ser	Asp	Tyr	Asp	Ser	Asp	Gly	Ser	His	Asp	Leu	Ile	Gly	210	215	220	
Thr	Phe	His	Thr	Thr	Leu	Ala	Gln	Leu	Gln	Ala	Val	Pro	Ala	Glu	Phe	225	230	235	240
Glu	Cys	Val	His	Pro	Glu	Lys	Gln	Gln	Arg	Lys	Lys	Asn	Tyr	Arg	Asn	245	250	255	
Ser	Gly	Thr	Val	Arg	Val	Lys	Thr	Cys	Arg	Val	Glu	Thr	Glu	Tyr	Ser	260	265	270	
Phe	Leu	Asp	Tyr	Val	Met	Gly	Gly	Cys	Gln	Ile	Asn	Phe	Thr	Val	Gly	275	280	285	
Val	Asp	Phe	Thr	Gly	Ser	Asn	Gly	Asp	Pro	Ser	Ser	Pro	Asp	Ser	Leu	290	295	300	
His	Tyr	Leu	Ser	Pro	Thr	Gly	Val	Asn	Glu	Tyr	Leu	Thr	Ala	Leu	Trp	305	310	315	320
Ser	Val	Gly	Ser	Val	Val	Gln	Asp	Tyr	Asp	Ser	Asp	Lys	Leu	Phe	Pro	325	330	335	

Ala Phe Gly Phe Gly Ala Gln Val Pro Pro Asp Trp Gln Val Ser His
 340 345 350

Glu Phe Ala Leu Asn Phe Asn Pro Ser Asn Pro Tyr Cys Ala Gly Ile
 355 360 365

Gln Gly Ile Val Asp Ala Tyr Arg Gln Ala Leu Pro Gln Val Arg Leu
 370 375 380

Tyr Gly Pro Thr Asn Phe Ala Pro Ile Ile Asn His Val Ala Arg Phe
 385 390 395 400

Ala Ala Gln Ala Ala Gln Gln Arg Ser Ala Ser Gln Tyr Phe Val Leu
 405 410 415

Leu Leu Leu Thr Asp Gly Ala Val Thr Asp Val Glu Ala Thr Cys Lys
 420 425 430

Ala Val Val Asp Ala Ser Lys Leu Pro Met Ser Val Ile Ile Val Gly
 435 440 445

Val Gly Gly Gly His Ser
 450

<210> 256

<211> 94

<212> PRT

<213> Homo sapiens

<400> 256

Leu Ala Gly Arg Arg Leu Asp Lys Lys Asp Leu Phe Gly Lys Ser Asp
 1 5 10 15

Pro Phe Leu Glu Phe Tyr Lys Pro Gly Asp Asp Gly Lys Trp Met Leu
 20 25 30

Val His Arg Thr Glu Val Ile Lys Tyr Thr Leu Asp Pro Val Trp Lys
 35 40 45

Pro Phe Thr Val Pro Leu Val Ser Leu Cys Asp Gly Asp Met Glu Lys
 50 55 60

Pro Ile Gln Val Met Cys Tyr Asp Tyr Asp Asn Asp Gly Gly His Asp
 65 70 75 80

Phe Ile Gly Glu Phe Gln Thr Ser Val Ser Gln Met Cys Glu
 85 90

<210> 257
<211> 88
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Protein kinase
C conserved region 2 domain sequence

<400> 257
Ile Ser Ala Arg Asn Leu Pro Pro Lys Asp Lys Gly Gly Lys Ser Asp
1 5 10 15
Pro Tyr Val Lys Val Ser Leu Asp Gly Asp Pro Arg Glu Lys Lys Lys
20 25 30
Thr Lys Val Val Lys Asn Thr Leu Asn Pro Val Trp Asn Glu Thr Phe
35 40 45
Glu Phe Glu Val Pro Pro Pro Glu Leu Ser Glu Leu Glu Ile Glu Val
50 55 60
Tyr Asp Lys Asp Arg Phe Ser Arg Asp Asp Phe Ile Gly Arg Val Thr
65 70 75 80
Ile Pro Leu Ser Asp Leu Leu Leu
85

<210> 258
<211> 100
<212> PRT
<213> Homo sapiens

<400> 258
Val Ser Gly Gln Asn Leu Leu Asp Arg Asp Val Thr Ser Lys Ser Asp
1 5 10 15
Pro Phe Cys Val Leu Phe Thr Glu Asn Asn Gly Arg Trp Ile Glu Tyr
20 25 30
Asp Arg Thr Glu Thr Ala Ile Asn Asn Leu Asn Pro Ala Phe Ser Lys
35 40 45
Lys Phe Val Leu Asp Tyr His Phe Glu Glu Val Gln Lys Leu Lys Phe
50 55 60

Ala Leu Phe Asp Gln Asp Lys Ser Ser Met Arg Leu Asp Glu His Asp
65 70 75 80

Phe Leu Gly Gln Phe Ser Cys Ser Leu Gly Thr Ile Val Ser Ser Lys
85 90 95

Lys Ile Thr Arg
100

<210> 259

<211> 94

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Protein kinase
C conserved region 2 domain sequence

<400> 259

Ile Ser Ala Arg Asn Leu Pro Pro Lys Asp Lys Gly Gly Lys Ser Asp
1 5 10 15

Pro Tyr Val Lys Val Ser Leu Asp Gly Asp Pro Arg Glu Lys Lys Lys
20 25 30

Thr Lys Val Val Lys Asn Thr Leu Asn Pro Val Trp Asn Glu Thr Phe
35 40 45

Glu Phe Glu Val Pro Pro Pro Glu Leu Ser Glu Leu Glu Ile Glu Val
50 55 60

Tyr Asp Lys Asp Arg Phe Ser Arg Asp Asp Phe Ile Gly Arg Val Thr
65 70 75 80

Ile Pro Leu Ser Asp Leu Leu Leu Gly Gly Arg His Glu Lys
85 90

<210> 260

<211> 85

<212> PRT

<213> Homo sapiens

<400> 260

Val Ser Gly Gln Asn Leu Leu Asp Arg Asp Val Thr Ser Lys Ser Asp
1 5 10 15

Pro Phe Cys Val Leu Phe Thr Glu Asn Asn Gly Arg Trp Ile Glu Tyr
 20 25 30
 Asp Arg Thr Glu Thr Ala Ile Asn Asn Leu Asn Pro Ala Phe Ser Lys
 35 40 45
 Lys Phe Val Leu Asp Tyr His Phe Glu Glu Val Gln Lys Leu Lys Phe
 50 55 60
 Ala Leu Phe Asp Gln Asp Lys Ser Ser Met Arg Leu Asp Glu His Asp
 65 70 75 80
 Phe Leu Gly Gln Phe
 85

<210> 261
 <211> 82
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: C2 domain
 sequence

<400> 261
 Ile Ser Ala Arg Asn Leu Pro Lys Met Asp Met Asn Gly Leu Ser Asp
 1 5 10 15
 Pro Tyr Val Lys Val Asp Leu Asp Gly Asp Pro Lys Asp Thr Lys Lys
 20 25 30
 Phe Lys Thr Lys Thr Val Lys Lys Thr Leu Asn Pro Val Trp Asn Glu
 35 40 45
 Thr Phe Val Phe Glu Lys Val Pro Leu Pro Asp Leu Ala Ser Leu Arg
 50 55 60
 Phe Ala Val Tyr Asp Glu Asp Arg Phe Ser Arg Asp Asp Phe Ile Gly
 65 70 75 80
 Gln Val

<210> 262
 <211> 85

<212> PRT

<213> Homo sapiens

<400> 262

Leu Ala Gly Arg Arg Leu Asp Lys Lys Asp Leu Phe Gly Lys Ser Asp
1 5 10 15

Pro Phe Leu Glu Phe Tyr Lys Pro Gly Asp Asp Gly Lys Trp Met Leu
20 25 30

Val His Arg Thr Glu Val Ile Lys Tyr Thr Leu Asp Pro Val Trp Lys
35 40 45

Pro Phe Thr Val Pro Leu Val Ser Leu Cys Asp Gly Asp Met Glu Lys
50 55 60

Pro Ile Gln Val Met Cys Tyr Asp Tyr Asp Asn Asp Gly Gly His Asp
65 70 75 80

Phe Ile Gly Glu Phe
85

<210> 263

<211> 82

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: C2 domain
sequence

<400> 263

Ile Ser Ala Arg Asn Leu Pro Lys Met Asp Met Asn Gly Leu Ser Asp
1 5 10 15

Pro Tyr Val Lys Val Asp Leu Asp Gly Asp Pro Lys Asp Thr Lys Lys
20 25 30

Phe Lys Thr Lys Thr Val Lys Lys Thr Leu Asn Pro Val Trp Asn Glu
35 40 45

Thr Phe Val Phe Glu Lys Val Pro Leu Pro Asp Leu Ala Ser Leu Arg
50 55 60

Phe Ala Val Tyr Asp Glu Asp Arg Phe Ser Arg Asp Asp Phe Ile Gly
65 70 75 80

Gln Val

<210> 264

<211> 174

<212> PRT

<213> Homo sapiens

<400> 264

Met Gly Thr Asn Glu Tyr Leu Ser Ala Ile Trp Ala Val Gly Gln Ile
1 5 10 15
Ile Gln Asp Tyr Asp Ser Asp Lys Met Phe Pro Ala Leu Gly Phe Gly
20 25 30
Ala Gln Leu Pro Pro Asp Trp Lys Val Ser His Glu Phe Ala Ile Asn
35 40 45
Phe Asn Pro Thr Asn Pro Phe Cys Ser Gly Val Asp Gly Ile Ala Gln
50 55 60
Ala Tyr Ser Ala Cys Leu Pro His Ile Arg Phe Tyr Gly Pro Thr Asn
65 70 75 80
Phe Ser Pro Ile Val Asn His Val Ala Arg Phe Ala Ala Gln Ala Thr
85 90 95
Gln Gln Arg Thr Ala Thr Gln Tyr Phe Ile Leu Leu Ile Ile Thr Asp
100 105 110
Gly Val Ile Ser Asp Met Glu Glu Thr Arg His Ala Val Val Gln Ala
115 120 125
Ser Lys Leu Pro Met Ser Ile Ile Ile Val Gly Val Gly Asn Ala Asp
130 135 140
Phe Ala Ala Met Glu Phe Leu Asp Gly Asp Ser Arg Met Leu Arg Ser
145 150 155 160
His Thr Gly Glu Glu Ala Ala Arg Asp Ile Val Gln Phe Val
165 170

<210> 265

<211> 166

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: von Willebrand
factor (vWF) type A domain sequence

<400> 265

Met Gly Gly Asn Arg Phe Glu Leu Ala Lys Glu Phe Val Leu Lys Leu
1 5 10 15
Val Glu Gln Leu Asp Ile Gly Pro Asp Gly Asp Arg Val Gly Leu Val
20 25 30
Thr Phe Ser Ser Asp Ala Arg Val Leu Phe Pro Leu Asn Asp Ser Gln
35 40 45
Ser Lys Asp Ala Leu Leu Glu Ala Leu Ala Ser Leu Ser Tyr Ser Leu
50 55 60
Gly Gly Gly Thr Asn Leu Gly Ala Ala Leu Glu Tyr Ala Leu Glu Asn
65 70 75 80
Leu Phe Ser Glu Ser Ala Gly Ser Arg Arg Gly Ala Pro Lys Val Leu
85 90 95
Ile Leu Ile Thr Asp Gly Glu Ser Asn Asp Gly Gly Glu Asp Ile Leu
100 105 110
Lys Ala Ala Lys Glu Leu Lys Arg Ser Gly Val Lys Val Phe Val Val
115 120 125
Gly Val Gly Asn Asp Val Asp Glu Glu Glu Leu Lys Lys Leu Ala Ser
130 135 140
Ala Pro Gly Gly Val Phe Val Val Glu Asp Leu Pro Ser Leu Leu Asp
145 150 155 160
Leu Leu Ile Asp Leu Leu
165

<210> 266

<211> 416

<212> PRT

<213> Homo sapiens

<400> 266

Met Leu Ala Leu Leu Val Leu Val Thr Val Ala Leu Ala Ser Ala His
1 5 10 15

His Gly Gly Glu His Phe Glu Gly Glu Lys Val Phe Arg Val Asn Val
 20 25 30
 Glu Asp Glu Asn His Ile Asn Ile Ile Arg Glu Leu Ala Ser Thr Thr
 35 40 45
 Gln Ile Asp Phe Trp Lys Pro Asp Ser Val Thr Gln Ile Lys Pro His
 50 55 60
 Ser Thr Val Asp Phe Arg Val Lys Ala Glu Asp Thr Val Thr Val Glu
 65 70 75 80
 Asn Val Leu Lys Gln Asn Glu Leu Gln Tyr Lys Val Leu Ile Ser Asn
 85 90 95
 Leu Arg Asn Val Val Glu Ala Gln Phe Asp Ser Arg Val Arg Ala Thr
 100 105 110
 Gly His Ser Tyr Glu Lys Tyr Asn Lys Trp Glu Thr Ile Glu Ala Trp
 115 120 125
 Thr Gln Gln Val Ala Thr Glu Asn Pro Ala Leu Ile Ser Arg Ser Val
 130 135 140
 Ile Gly Thr Thr Phe Glu Gly Arg Ala Ile Tyr Leu Leu Lys Val Gly
 145 150 155 160
 Lys Ala Gly Gln Asn Lys Pro Ala Ile Phe Met Asp Cys Gly Phe His
 165 170 175
 Ala Arg Glu Trp Ile Ser Pro Ala Phe Cys Gln Trp Phe Val Arg Glu
 180 185 190
 Ala Val Arg Thr Tyr Gly Arg Glu Ile Gln Val Thr Glu Leu Leu Asp
 195 200 205
 Lys Leu Asp Phe Tyr Val Leu Pro Val Leu Asn Ile Asp Gly Tyr Ile
 210 215 220
 Tyr Thr Trp Thr Lys Ser Arg Phe Trp Arg Lys Thr Arg Ser Thr His
 225 230 235 240
 Thr Gly Ser Ser Ile Gly Thr Asp Pro Asn Arg Asn Phe Asp Ala Gly
 245 250 255
 Trp Cys Glu Ile Gly Ala Ser Arg Asn Pro Cys Asp Glu Thr Tyr Cys
 260 265 270

Gly Pro Ala Ala Glu Ser Glu Lys Glu Thr Lys Ala Leu Ala Asp Phe
 275 280 285
 Ile Arg Asn Lys Leu Ser Ser Ile Lys Ala Tyr Leu Thr Ile His Ser
 290 295 300
 Tyr Ser Gln Met Met Ile Tyr Pro Tyr Ser Tyr Ala Tyr Lys Leu Gly
 305 310 315 320
 Glu Asn Asn Ala Glu Leu Asn Ala Leu Ala Lys Ala Thr Val Lys Glu
 325 330 335
 Leu Ala Ser Leu His Gly Thr Lys Tyr Thr Tyr Gly Pro Gly Ala Thr
 340 345 350
 Thr Ile Tyr Pro Ala Ala Gly Gly Ser Asp Asp Trp Ala Tyr Asp Gln
 355 360 365
 Gly Ile Arg Tyr Ser Phe Thr Phe Glu Leu Arg Asp Thr Gly Arg Tyr
 370 375 380
 Gly Phe Leu Leu Pro Glu Ser Gln Ile Arg Ala Thr Cys Glu Glu Thr
 385 390 395 400
 Phe Leu Ala Ile Lys Tyr Val Ala Ser Tyr Val Leu Glu His Leu Tyr
 405 410 415

<210> 267
 <211> 417
 <212> PRT
 <213> Homo sapiens

<400> 267
 Met Leu Ala Leu Leu Val Leu Val Thr Val Ala Leu Ala Ser Ala His
 1 5 10 15
 His Gly Gly Glu His Phe Glu Gly Glu Lys Val Phe Arg Val Asn Val
 20 25 30
 Glu Asp Glu Asn His Ile Asn Ile Ile Arg Glu Leu Ala Ser Thr Thr
 35 40 45
 Gln Ile Asp Phe Trp Lys Pro Asp Ser Val Thr Gln Ile Lys Pro His

Leu Arg Asn Val Val Glu Ala Gln Phe Asp Ser Arg Val Arg Ala Thr
 100 105 110
 Gly His Ser Tyr Glu Lys Tyr Asn Lys Trp Glu Thr Ile Glu Ala Trp
 115 120 125
 Thr Gln Gln Val Ala Thr Glu Asn Pro Ala Leu Ile Ser Arg Ser Val
 130 135 140
 Ile Gly Thr Thr Phe Glu Gly Arg Ala Ile Tyr Leu Leu Lys Val Gly
 145 150 155 160
 Lys Ala Gly Gln Asn Lys Pro Ala Ile Phe Met Asp Cys Gly Phe His
 165 170 175
 Ala Arg Glu Trp Ile Ser Pro Ala Phe Cys Gln Trp Phe Val Arg Glu
 180 185 190
 Ala Val Arg Thr Tyr Gly Arg Glu Ile Gln Val Thr Glu Leu Leu Asn
 195 200 205
 Lys Leu Asp Phe Tyr Val Leu Pro Val Leu Asn Ile Asp Gly Tyr Ile
 210 215 220
 Tyr Thr Trp Thr Lys Ser Arg Phe Trp Arg Lys Thr Arg Ser Thr His
 225 230 235 240
 Thr Gly Ser Ser Cys Ile Gly Thr Asp Pro Asn Arg Asn Phe Asp Ala
 245 250 255
 Gly Trp Cys Glu Ile Gly Ala Ser Arg Asn Pro Cys Asp Glu Thr Tyr
 260 265 270
 Cys Gly Pro Ala Ala Glu Ser Glu Lys Glu Thr Lys Ala Leu Ala Asp
 275 280 285
 Phe Ile Arg Asn Lys Leu Ser Ser Ile Lys Ala Tyr Leu Thr Ile His
 290 295 300
 Ser Tyr Ser Gln Met Met Ile Tyr Pro Tyr Ser Tyr Ala Tyr Lys Leu
 305 310 315 320
 Gly Glu Asn Asn Ala Glu Leu Asn Ala Leu Ala Lys Ala Thr Val Lys
 325 330 335
 Glu Leu Ala Ser Leu His Gly Thr Lys Tyr Thr Tyr Gly Pro Gly Ala
 340 345 350

Thr Thr Ile Tyr Pro Ala Ala Gly Gly Ser Asp Asp Trp Ala Tyr Asp
355 360 365

Gln Gly Ile Arg Tyr Ser Phe Thr Phe Glu Leu Arg Asp Thr Gly Arg
370 375 380

Tyr Gly Phe Leu Leu Pro Glu Ser Gln Ile Arg Ala Thr Cys Glu Glu
385 390 395 400

Thr Phe Leu Ala Ile Lys Tyr Val Ala Ser Tyr Val Leu Glu His Leu
405 410 415

Tyr

<210> 269

<211> 416

<212> PRT

<213> Sus scrofa

<400> 269

Met Leu Ala Phe Leu Ile Leu Val Thr Val Thr Leu Ala Ser Ala His
1 5 10 15

His Ser Gly Glu His Phe Glu Gly Glu Lys Val Phe Arg Val Asn Val
20 25 30

Glu Asp Glu Asn Asp Ile Ser Leu Leu His Glu Leu Ala Ser Thr Arg
35 40 45

Gln Ile Asp Phe Trp Lys Pro Asp Ser Val Thr Gln Ile Lys Pro His
50 55 60

Ser Thr Val Asp Phe Arg Val Lys Ala Glu Asp Ile Leu Ala Val Glu
65 70 75 80

Asp Phe Leu Glu Gln Asn Glu Leu Gln Tyr Glu Val Leu Ile Asn Asn
85 90 95

Leu Arg Ser Val Leu Glu Ala Gln Phe Asp Ser Arg Val Arg Thr Thr
100 105 110

Gly His Ser Tyr Glu Lys Tyr Asn Asn Trp Glu Thr Ile Glu Ala Trp
115 120 125

Thr Lys Gln Val Thr Ser Glu Asn Pro Asp Leu Ile Ser Arg Thr Ala
130 135 140

Ile Gly Thr Thr Phe Leu Gly Asn Asn Ile Tyr Leu Leu Lys Val Gly
 145 150 155 160
 Lys Pro Gly Pro Asn Lys Pro Ala Ile Phe Met Asp Cys Gly Phe His
 165 170 175
 Ala Arg Glu Trp Ile Ser His Ala Phe Cys Gln Trp Phe Val Arg Glu
 180 185 190
 Ala Val Leu Thr Tyr Gly Tyr Glu Ser His Met Thr Glu Phe Leu Asn
 195 200 205
 Lys Leu Asp Phe Tyr Val Leu Pro Val Leu Asn Ile Asp Gly Tyr Ile
 210 215 220
 Tyr Thr Trp Thr Lys Asn Arg Met Trp Arg Lys Thr Arg Ser Thr Asn
 225 230 235 240
 Ala Gly Thr Thr Cys Ile Gly Thr Asp Pro Asn Arg Asn Phe Asp Ala
 245 250 255
 Gly Trp Cys Thr Thr Gly Ala Ser Thr Asp Pro Cys Asp Glu Thr Tyr
 260 265 270
 Cys Gly Ser Ala Ala Glu Ser Glu Lys Glu Thr Lys Ala Leu Ala Asp
 275 280 285
 Phe Ile Arg Asn Asn Leu Ser Ser Ile Lys Ala Tyr Leu Thr Ile His
 290 295 300
 Ser Tyr Ser Gln Met Ile Leu Tyr Pro Tyr Ser Tyr Asp Tyr Lys Leu
 305 310 315 320
 Pro Glu Asn Asn Ala Glu Leu Asn Asn Leu Ala Lys Ala Ala Val Lys
 325 330 335
 Glu Leu Ala Thr Leu Tyr Gly Thr Lys Tyr Thr Tyr Gly Pro Gly Ala
 340 345 350
 Thr Thr Ile Tyr Pro Ala Ala Gly Gly Ser Asp Asp Trp Ala Tyr Asp
 355 360 365
 Gln Gly Ile Lys Tyr Ser Phe Thr Phe Glu Leu Arg Asp Lys Gly Arg
 370 375 380
 Tyr Gly Phe Ile Leu Pro Glu Ser Gln Ile Gln Ala Thr Cys Glu Glu
 385 390 395 400

Thr Met Leu Ala Ile Lys Tyr Val Thr Asn Tyr Val Leu Gly His Leu
 405 410 415

<210> 270
 <211> 416
 <212> PRT
 <213> Canis familiaris

<220>
 <221> VARIANT
 <222> (192)
 <223> Where Xaa is Val, Ala, Asp or Gly

<400> 270
 Met Ala Phe Leu Ile Leu Val Thr Leu Ala Leu Ala Ser Ala His Tyr
 1 5 10 15
 Ser Gly Glu His Phe Glu Gly Glu Lys Val Phe Arg Val Asn Val Glu
 20 25 30
 Asp Glu Asn His Ile Asn Leu Leu His Thr Leu Ala Ser Thr Thr Gln
 35 40 45
 Ile Asp Phe Trp Lys Pro Asp Ser Val Thr Gln Ile Lys Pro His Ser
 50 55 60
 Thr Ala Asp Phe Arg Val Lys Ala Glu Asp Ile Leu Thr Val Glu Asp
 65 70 75 80
 Phe Leu Lys Gln Asn Glu Leu His Tyr Glu Val Leu Ile Asn Asn Leu
 85 90 95
 Arg Leu Val Leu Glu Gly Gln Phe Gly Arg Gln Val Pro Ala Thr Gly
 100 105 110
 His Ser Tyr Glu Lys Tyr Asn Arg Trp Glu Thr Ile Glu Ala Trp Thr
 115 120 125
 Gln Gln Val Thr Ser Glu Asn Pro Asp Leu Ile Ser Arg Arg Ser Ile
 130 135 140
 Gly Thr Thr Phe Glu Gly Arg Thr Ile Tyr Leu Leu Lys Val Gly Lys
 145 150 155 160

Ala Gly Gln Asn Lys Pro Ala Ile Phe Met Asp Cys Gly Phe His Ala
 165 170 175
 Arg Glu Trp Ile Ser Pro Ala Phe Trp Gln Trp Phe Val Arg Glu Xaa
 180 185 190
 Ile Arg Thr Tyr Gly Gln Glu Ile His Met Thr Glu Leu Leu Asp Lys
 195 200 205
 Leu Asp Phe Tyr Val Leu Pro Val Gly Asn Ile Asp Gly Tyr Val Tyr
 210 215 220
 Thr Trp Thr Lys Asn Arg Met Trp Arg Lys Thr Arg Ser Thr Gln Val
 225 230 235 240
 Gly Thr Asn Cys Val Gly Thr Asp Pro Thr Arg Asn Phe Asp Ala Gly
 245 250 255
 Trp Cys Lys Ile Gly Ala Ser Arg Asn Pro Cys Asp Glu Thr Tyr Cys
 260 265 270
 Gly Pro Ala Ala Glu Ser Glu Lys Glu Thr Lys Ala Leu Ala Asn Phe
 275 280 285
 Ile Arg Ser Asn Leu Ser Ser Ile Lys Ala Tyr Leu Thr Ile His Ser
 290 295 300
 Tyr Ser Gln Met Met Leu Tyr Pro Tyr Ser Tyr Asp Tyr Lys Leu Thr
 305 310 315 320
 Glu Asn Asn Ala Glu Leu Asn Ala Leu Ala Lys Ala Thr Val Lys Glu
 325 330 335
 Leu Ala Thr Leu His Gly Thr Lys Tyr Thr Tyr Gly Pro Gly Ala Thr
 340 345 350
 Thr Ile Tyr Pro Ala Ala Gly Gly Ser Asp Asp Trp Ala Tyr Asp Gln
 355 360 365
 Gly Ile Lys Tyr Ser Phe Thr Phe Glu Leu Arg Asp Lys Gly Arg Tyr
 370 375 380
 Gly Phe Ala Leu Pro Glu Ser Gln Ile Ser Pro Thr Cys Glu Glu Thr
 385 390 395 400
 Leu Leu Ala Ile Lys His Leu Ala Arg Tyr Val Leu Gln His Leu Tyr
 405 410 415

<210> 271
<211> 82
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Propep_M14
domain sequence

<400> 271
Gln Val Leu Arg Val Lys Val Ala Asp Glu Asp Gln Val Lys Leu Leu
1 5 10 15
Lys Asp Leu Glu Asn Thr Glu His Leu Glu Leu Asp Phe Trp Lys Pro
20 25 30
Asp Ser Ala Thr Pro Ile Lys Pro Gly Ser Thr Val Asp Phe Arg Val
35 40 45
Pro Ala Glu Asp Ile Gln Ala Val Lys Ser Phe Leu Glu Gln Ser Gly
50 55 60
Ile His Tyr Glu Val Leu Ile Glu Asp Val Gln Glu Leu Leu Glu Glu
65 70 75 80
Gln Phe

<210> 272
<211> 80
<212> PRT
<213> Homo sapiens

<400> 272
Lys Val Phe Arg Val Asn Val Glu Asp Glu Asn His Ile Asn Ile Ile
1 5 10 15
Arg Glu Leu Ala Thr Phe Ile Gln Ile Asp Phe Trp Lys Pro Asp Ser
20 25 30
Val Thr Gln Ile Lys Pro His Ser Thr Val Asp Phe Arg Val Lys Ala
35 40 45

Glu Asp Thr Val Thr Val Glu Asn Val Leu Lys Gln Asn Glu Leu Gln
50 55 60

Tyr Lys Val Leu Ile Ser Asn Leu Arg Asn Val Val Glu Ala Gln Phe
65 70 75 80

<210> 273

<211> 125

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Zn_carbOpept
domain sequence

<400> 273

Tyr His Asn Leu Glu Glu Ile Tyr Ala Trp Leu Asp Leu Leu Val Ser
1 5 10 15

Asn Phe Pro Asp Leu Val Ser Lys Val Ser Ile Gly Lys Ser Tyr Glu
20 25 30

Gly Arg Asp Leu Lys Val Leu Lys Ile Ser Asp Asn Pro Ala Thr Gly
35 40 45

Glu Asn Glu Pro Glu Val Phe Ala Val Ala Gly Trp Ile His Ala Arg
50 55 60

Glu Trp Val Thr Ser Ala Thr Leu Leu Trp Leu Leu Lys Glu Leu Val
65 70 75 80

Ala Asn Tyr Gly Ser Asp Lys Thr Ile Thr Lys Leu Leu Asp Gly Leu
85 90 95

Asp Leu Phe Tyr Ile Leu Pro Val Phe Asn Pro Asp Gly Tyr Ala Tyr
100 105 110

Ser Ile Thr Thr Asp Ser Tyr Arg Met Trp Arg Lys Thr
115 120 125

<210> 274

<211> 118

<212> PRT

<213> Homo sapiens

<400> 274

Tyr Asn Lys Trp Glu Thr Ile Glu Ala Trp Thr Gln Gln Val Ala Thr
1 5 10 15

Glu Asn Pro Ala Leu Ile Ser Arg Ser Val Ile Gly Thr Thr Phe Glu
20 25 30

Gly Arg Ala Ile Tyr Leu Leu Lys Val Gly Lys Ala Gly Gln Asn Lys
35 40 45

Pro Ala Ile Phe Met Glu Cys Gly Phe His Ala Arg Glu Trp Ile Ser
50 55 60

Pro Ala Phe Cys Gln Trp Phe Val Arg Glu Ala Val Arg Thr Tyr Gly
65 70 75 80

Arg Glu Ile Gln Val Thr Glu Leu Leu Asp Lys Leu Asp Phe Tyr Val
85 90 95

Leu Pro Val Leu Asn Ile Asp Gly Tyr Ile Tyr Thr Trp Thr Lys Ser
100 105 110

Arg Phe Trp Arg Lys Thr
115

<210> 275

<211> 101

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Zn_carbOpept
domain sequence

<400> 275

Leu Leu Tyr Pro Tyr Gly Tyr Asp Tyr Asn Leu Asn Pro Asp Ala Asn
1 5 10 15

Asp Leu Asp Glu Leu Ser Asp Leu Lys Ile Ala Ala Asp Ala Leu Ser
20 25 30

Ala Arg His Gly Thr Tyr Tyr Thr Leu Gly Leu Pro Gly Ser Ser Thr
35 40 45

Ile Tyr Pro Ala Ser Ala Gly Gly Ser Asp Asp Trp Ala Tyr Asp Val
50 55 60
Gly Ile Ile Lys Tyr Ala Phe Thr Phe Glu Leu Arg Pro Asp Thr Gly
65 70 75 80
Ser Tyr Gly Asn Pro Cys Phe Leu Leu Pro Glu Glu Gln Ile Ile Pro
85 90 95
Thr Gly Ser Glu Glu
100

<210> 276
<211> 91
<212> PRT
<213> Homo sapiens

<400> 276
Trp Ile Tyr Pro Tyr Ser Tyr Ala Tyr Lys Leu Gly Glu Asn Asn Ala
1 5 10 15
Glu Leu Asn Ala Leu Ala Lys Ala Thr Val Lys Glu Leu Ala Ser Leu
20 25 30
His Gly Thr Lys Tyr Thr Tyr Gly Pro Gly Ala Thr Thr Ile Tyr Pro
35 40 45
Ala Ala Gly Gly Ser Asp Asp Trp Ala Tyr Asp Gln Gly Ile Arg Tyr
50 55 60
Ser Phe Thr Phe Glu Leu Arg Asp Thr Gly Arg Tyr Gly Phe Leu Leu
65 70 75 80
Pro Glu Ser Gln Ile Arg Ala Thr Cys Glu Glu
85 90

<210> 277
<211> 159
<212> PRT
<213> Homo sapiens

<400> 277
Met Ala Lys Ser Lys Asn His Thr Thr His Asn Gln Ser Arg Lys Trp
1 5 10 15
His Arg Asn Gly Ile Lys Lys Pro Arg Ser Gln Arg Tyr Glu Ser Leu

	20		25		30
Lys Gly Val Asp Pro Lys Phe Leu Arg Asn Met Arg Phe Ala Lys Lys					
	35		40		45
His Asn Lys Lys Gly Leu Lys Lys Met Gln Ala Asn Asn Ala Lys Ala					
	50		55		60
Met Ser Ala Arg Ala Glu Ala Ile Lys Ala Leu Val Lys Pro Lys Glu					
	65		70		75 80
Val Lys Pro Lys Ile Pro Lys Gly Val Ser Arg Lys Leu Asp Arg Leu					
		85		90	95
Ala Tyr Ile Ala His Pro Lys Leu Gly Lys Arg Ala Arg Ala Arg Ile					
	100		105		110
Ala Lys Gly Leu Arg Leu Cys Arg Pro Lys Ala Lys Ala Lys Ala Lys					
	115		120		125
Ala Lys Asp Gln Thr Lys Ala Gln Ala Ala Ala Pro Ala Ser Val Pro					
	130		135		140
Ala Gln Ala Pro Lys Arg Thr Gln Ala Pro Thr Lys Ala Ser Glu					
	145		150		155

<210> 278

<211> 157

<212> PRT

<213> Homo sapiens

<400> 278

Met Ala Lys Ser Lys Asn His Thr Thr His Asn Gln Ser Arg Lys Trp					
	1		5		10 15
His Arg Asn Gly Ile Lys Lys Pro Arg Ser Gln Arg Tyr Glu Ser Leu					
		20		25	30
Lys Gly Val Asp Pro Lys Phe Leu Arg Asn Met Arg Phe Ala Lys Lys					
	35		40		45
His Asn Lys Lys Gly Leu Lys Lys Met Gln Ala Asn Asn Ala Lys Ala					
	50		55		60
Met Ser Ala Arg Ala Glu Ala Ile Lys Ala Leu Val Lys Pro Lys Glu					
	65		70		75 80

Val Lys Pro Lys Ile Pro Lys Gly Val Ser Cys Lys Leu Asp Arg His
85 90 95

Ala Tyr Val Ala His Pro Lys Leu Gly Lys Arg Ala Leu Ala Arg Ile
100 105 110

Ala Lys Gly Leu Arg Leu Cys Arg Pro Lys Ala Lys Ala Lys Ala Lys
115 120 125

Asp Gln Thr Lys Ala Gln Ala Ala Ala Pro Ala Ser Val Pro Ala Gln
130 135 140

Ala Pro Lys Gly Thr Gln Ala Pro Thr Lys Ala Ser Glu
145 150 155

<210> 279

<211> 155

<212> PRT

<213> Homo sapiens

<400> 279

Met Ala Lys Ser Lys Asn His Thr Thr His Asn Gln Ser Arg Lys Trp
1 5 10 15

His Arg Asn Gly Ile Lys Lys Pro Arg Ser Gln Arg Tyr Glu Ser Leu
20 25 30

Lys Gly Val Asp Pro Lys Phe Leu Arg Asn Met His Phe Ala Lys Lys
35 40 45

His Asn Lys Lys Gly Leu Lys Lys Met Gln Ala Asn Asn Ala Lys Ala
50 55 60

Met Ser Ala Arg Ala Glu Ala Ile Lys Ala Leu Val Lys Pro Lys Glu
65 70 75 80

Val Lys Pro Lys Ile Pro Lys Gly Val Ser Arg Lys Leu Asp Arg Leu
85 90 95

Ala Tyr Ile Ala His Pro Lys Leu Gly Lys Arg Ala Arg Ala Arg Ile
100 105 110

Ala Lys Gly Leu Arg Leu Cys Arg Pro Lys Ala Lys Ala Lys Asp Gln
115 120 125

Thr Lys Ala Gln Ala Ala Ala Pro Pro Ser Val Pro Ala Gln Ala Pro
130 135 140

Lys Gly Ala Gln Ala Pro Thr Lys Ala Ser Glu
 145 150 155

<210> 280
 <211> 159
 <212> PRT
 <213> Homo sapiens

<400> 280
 Met Ala Lys Ser Lys Asn His Thr Thr His Asn Gln Ser Arg Lys Trp
 1 5 10 15

His Arg Asn Gly Ile Lys Lys Pro Arg Ser Gln Arg Tyr Glu Ser Leu
 20 25 30

Lys Gly Val Asp Pro Lys Phe Leu Arg Asn Met Arg Phe Ala Lys Lys
 35 40 45

His Asn Lys Lys Gly Leu Lys Lys Met Gln Ala Asn Asn Ala Lys Ala
 50 55 60

Met Ser Ala Arg Ala Glu Ala Ile Lys Ala Leu Val Lys Pro Lys Glu
 65 70 75 80

Val Lys Pro Lys Ile Pro Lys Gly Val Ser Arg Lys Leu Asp Arg Leu
 85 90 95

Ala Tyr Ile Ala His Pro Lys Leu Gly Lys Arg Ala Arg Ala Arg Ile
 100 105 110

Ala Lys Gly Leu Arg Leu Cys Ala Pro Lys Ala Lys Ala Lys Ala Lys
 115 120 125

Ala Lys Asp Gln Thr Lys Ala Gln Ala Ala Ala Pro Ala Ser Val Pro
 130 135 140

Ala Gln Ala Pro Lys Arg Thr Gln Ala Pro Thr Lys Ala Ser Glu
 145 150 155

<210> 281
 <211> 189
 <212> PRT
 <213> Homo sapiens

<400> 281

Met Ala Lys Ser Lys Asn His Asn Thr His Asp Gln Phe Gln Lys Arg
 1 5 10 15
 His Arg Asn Gly Ile Lys Lys Pro Gln Ser Gln Arg Ser Val Ser Leu
 20 25 30
 Lys Gly Val Asp Pro Lys Phe Leu Arg Asn Met Pro Phe Ala Lys Lys
 35 40 45
 His Ser Lys Lys Gly Leu Lys Lys Met Gln Ala Asn Ser Ala Lys Ala
 50 55 60
 Met Ser Ala Arg Ala Lys Ala Ile Lys Ala Leu Val Lys Pro Lys Glu
 65 70 75 80
 Val Lys Pro Lys Ile Pro Lys Gly Val Ser Arg Lys Leu Asn Gln Leu
 85 90 95
 Ala Tyr Thr Gly Tyr Pro Lys Leu Gly Lys His Ala Cys Ala Arg Ile
 100 105 110
 Ala Lys Ala Leu Arg Leu Cys Arg Pro Lys Ala Lys Ala Lys Asp Gln
 115 120 125
 Thr Lys Ala Gln Ala Ala Ala Pro Ala Ser Val Pro Ala Gln Ala Pro
 130 135 140
 Lys Gly Ala Gln Ser Pro Tyr Lys Gly Phe Arg Val Glu Ile Ser Val
 145 150 155 160
 Cys Gln Arg Glu Asp Arg Arg Thr Gly Ala Thr Pro Pro Gly Cys His
 165 170 175
 Arg His Gly Ala Gly Val Leu Leu Cys Tyr Leu Tyr Lys
 180 185

<210> 282

<211> 40

<212> PRT

<213> Homo sapiens

<400> 282

Lys Ser Lys Asn His Thr Thr His Asn Gln Ser Arg Lys Trp His Arg
 1 5 10 15
 Asn Gly Ile Lys Lys Pro Arg Ser Gln Arg Tyr Glu Ser Leu Lys Gly
 20 25 30

Val Asp Pro Lys Phe Leu Arg Asn
35 40

<210> 283
<211> 40
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ribosomal_L29e
domain sequence

<400> 283
Lys Ser Lys Asn His Thr Asn His Asn Gln Asn Lys Lys Ala His Arg
1 5 10 15
Asn Gly Ile Lys Lys Pro Gln Lys Lys Arg Tyr Leu Ser Leu Lys Gly
20 25 30

Val Asp Ala Lys Phe Arg Arg Asn
35 40

<210> 284
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: tandem repeat
unique to hRPL29

<400> 284
Lys Ala Lys Ala Lys Ala Lys Ala
1 5

<210> 285
<211> 790
<212> PRT
<213> Homo sapiens

<400> 285
Met Arg Ser Val Gln Ile Phe Leu Ser Gln Cys Arg Leu Leu Leu Leu
1 5 10 15

Leu Val Pro Thr Met Leu Leu Lys Ser Leu Gly Glu Asp Val Ile Phe
 20 25 30
 His Pro Glu Gly Glu Phe Asp Ser Tyr Glu Val Thr Ile Pro Glu Lys
 35 40 45
 Leu Ser Phe Arg Gly Glu Val Gln Gly Val Val Ser Pro Val Ser Tyr
 50 55 60
 Leu Leu Gln Leu Lys Gly Lys Lys His Val Leu His Leu Trp Pro Lys
 65 70 75 80
 Arg Leu Leu Leu Pro Arg His Leu Arg Val Phe Ser Phe Thr Glu His
 85 90 95
 Gly Glu Leu Leu Glu Asp His Pro Tyr Ile Pro Lys Asp Cys Asn Tyr
 100 105 110
 Met Gly Ser Val Lys Glu Ser Leu Asp Ser Lys Ala Thr Ile Ser Thr
 115 120 125
 Cys Met Gly Gly Leu Arg Gly Val Phe Asn Ile Asp Ala Lys His Tyr
 130 135 140
 Gln Ile Glu Pro Leu Lys Ala Ser Pro Ser Phe Glu His Val Val Tyr
 145 150 155 160
 Leu Leu Lys Lys Glu Gln Phe Gly Asn Gln Val Cys Gly Leu Ser Asp
 165 170 175
 Asp Glu Ile Glu Trp Gln Met Ala Pro Tyr Glu Asn Lys Ala Arg Leu
 180 185 190
 Arg Asp Phe Pro Gly Ser Tyr Lys His Pro Lys Tyr Leu Glu Leu Ile
 195 200 205
 Leu Leu Phe Asp Gln Ser Arg Tyr Arg Phe Val Asn Asn Asn Leu Ser
 210 215 220
 Gln Val Ile His Asp Ala Ile Leu Leu Thr Gly Ile Met Asp Thr Tyr
 225 230 235 240
 Phe Gln Asp Val Arg Met Arg Ile His Leu Lys Ala Leu Glu Val Trp
 245 250 255
 Thr Asp Phe Asn Lys Ile Arg Val Gly Tyr Pro Glu Leu Ala Glu Val
 260 265 270

Leu Gly Arg Phe Val Ile Tyr Lys Lys Ser Val Leu Asn Ala Arg Leu
 275 280 285

Ser Ser Asp Trp Ala His Leu Tyr Leu Gln Arg Lys Tyr Asn Asp Ala
 290 295 300

Leu Ala Trp Ser Phe Gly Lys Val Cys Ser Leu Glu Tyr Ala Gly Ser
 305 310 315 320

Val Ser Thr Leu Leu Asp Thr Asn Ile Leu Ala Pro Ala Thr Trp Ser
 325 330 335

Ala His Glu Leu Gly His Ala Val Gly Met Ser His Asp Glu Gln Tyr
 340 345 350

Cys Gln Cys Arg Gly Arg Pro Asn Cys Ile Met Gly Ser Gly Arg Thr
 355 360 365

Gly Phe Ser Asn Cys Ser Tyr Ile Ser Phe Phe Lys His Ile Ser Ser
 370 375 380

Gly Ala Thr Cys Leu Asn Asn Ile Pro Gly Leu Gly Tyr Val Leu Lys
 385 390 395 400

Arg Cys Gly Asn Lys Ile Val Glu Asp Asn Glu Glu Cys Asp Cys Gly
 405 410 415

Ser Thr Glu Glu Cys Gln Lys Asp Arg Cys Cys Gln Ser Asn Cys Lys
 420 425 430

Leu Gln Pro Gly Ala Asn Cys Ser Ile Gly Leu Cys Cys His Asp Cys
 435 440 445

Arg Phe Arg Pro Ser Gly Tyr Val Cys Arg Gln Glu Gly Asn Glu Cys
 450 455 460

Asp Leu Ala Glu Tyr Cys Asp Gly Asn Ser Ser Ser Cys Pro Asn Asp
 465 470 475 480

Val Tyr Lys Gln Asp Gly Thr Pro Cys Lys Tyr Glu Gly Arg Cys Phe
 485 490 495

Arg Lys Gly Cys Arg Ser Arg Tyr Met Gln Cys Gln Ser Ile Phe Gly
 500 505 510

Pro Asp Ala Met Glu Ala Pro Ser Glu Cys Tyr Asp Ala Val Asn Leu
 515 520 525

Ile Gly Asp Gln Phe Gly Asn Cys Glu Ile Thr Gly Ile Arg Asn Phe
 530 535 540

Lys Lys Cys Glu Ser Ala Asn Ser Ile Cys Gly Arg Leu Gln Cys Ile
 545 550 555 560

Asn Val Glu Thr Ile Pro Asp Leu Pro Glu His Thr Thr Ile Ile Ser
 565 570 575

Thr His Leu Gln Ala Glu Asn Leu Met Cys Trp Gly Thr Gly Tyr His
 580 585 590

Leu Ser Met Lys Pro Met Gly Ile Pro Asp Leu Gly Met Ile Asn Asp
 595 600 605

Gly Thr Ser Cys Gly Glu Gly Arg Val Cys Phe Lys Lys Asn Cys Val
 610 615 620

Asn Ser Ser Val Leu Gln Phe Asp Cys Leu Pro Glu Lys Cys Asn Thr
 625 630 635 640

Arg Gly Val Cys Asn Asn Arg Lys Asn Cys His Cys Met Tyr Gly Trp
 645 650 655

Ala Pro Pro Phe Cys Glu Glu Val Gly Tyr Gly Gly Ser Ile Asp Ser
 660 665 670

Gly Pro Pro Gly Leu Leu Arg Gly Ala Ile Pro Ser Ser Ile Trp Val
 675 680 685

Val Ser Ile Ile Met Phe Arg Leu Ile Leu Leu Ile Leu Ser Val Val
 690 695 700

Phe Val Phe Phe Arg Gln Val Ile Gly Asn His Leu Lys Pro Lys Gln
 705 710 715 720

Glu Lys Met Pro Leu Ser Lys Ala Lys Thr Glu Gln Glu Glu Ser Lys
 725 730 735

Thr Lys Thr Val Gln Glu Glu Ser Lys Thr Lys Thr Gly Gln Glu Glu
 740 745 750

Ser Glu Ala Lys Thr Gly Gln Glu Glu Ser Lys Ala Lys Thr Gly Gln
 755 760 765

Glu Glu Ser Lys Ala Asn Ile Glu Ser Lys Arg Pro Lys Ala Lys Ser
 770 775 780

Val Lys Lys Gln Lys Lys
785 790

<210> 286

<211> 781

<212> PRT

<213> Homo sapiens

<400> 286

Met Arg Ser Val Gln Ile Phe Leu Ser Gln Cys Arg Leu Leu Leu Leu
1 5 10 15
Leu Val Pro Thr Met Leu Leu Lys Ser Leu Gly Glu Asp Val Ile Phe
20 25 30
His Pro Glu Gly Glu Phe Asp Ser Tyr Glu Val Thr Ile Pro Glu Lys
35 40 45
Leu Ser Phe Arg Gly Glu Val Gln Gly Val Val Ser Pro Val Ser Tyr
50 55 60
Leu Leu Gln Leu Lys Gly Lys Lys His Val Leu His Leu Trp Pro Lys
65 70 75 80
Arg Leu Leu Leu Pro Arg His Leu Arg Val Phe Ser Phe Thr Glu His
85 90 95
Gly Glu Leu Leu Glu Asp His Pro Tyr Ile Pro Lys Asp Cys Asn Tyr
100 105 110
Met Gly Ser Val Lys Glu Ser Leu Asp Ser Lys Ala Thr Ile Ser Thr
115 120 125
Cys Met Gly Gly Leu Arg Gly Val Phe Asn Ile Asp Ala Lys His Tyr
130 135 140
Gln Ile Glu Pro Leu Lys Ala Ser Pro Ser Phe Glu His Val Val Tyr
145 150 155 160
Leu Leu Lys Lys Glu Gln Phe Gly Asn Gln Val Cys Gly Leu Ser Asp
165 170 175
Asp Glu Ile Glu Trp Gln Met Ala Pro Tyr Glu Asn Lys Ala Arg Leu
180 185 190
Arg Asp Phe Pro Gly Ser Tyr Lys His Pro Lys Tyr Leu Glu Leu Ile
195 200 205

Leu Leu Phe Asp Gln Ser Arg Tyr Arg Phe Val Asn Asn Asn Leu Ser
 210 215 220
 Gln Val Ile His Asp Ala Ile Leu Leu Thr Gly Ile Met Asp Thr Tyr
 225 230 235 240
 Phe Gln Asp Val Arg Met Arg Ile His Leu Lys Ala Leu Glu Val Trp
 245 250 255
 Thr Asp Phe Asn Lys Ile Arg Val Gly Tyr Pro Glu Leu Ala Glu Val
 260 265 270
 Leu Gly Arg Phe Val Ile Tyr Lys Lys Ser Val Leu Asn Ala Arg Leu
 275 280 285
 Ser Ser Asp Trp Ala His Leu Tyr Leu Gln Arg Lys Tyr Asn Asp Ala
 290 295 300
 Leu Ala Trp Ser Phe Gly Lys Val Cys Ser Leu Glu Tyr Ala Gly Ser
 305 310 315 320
 Val Ser Thr Leu Leu Asp Thr Asn Ile Leu Ala Pro Ala Thr Trp Pro
 325 330 335
 Ala His Glu Leu Gly His Ala Val Gly Met Ser His Asp Glu Gln Tyr
 340 345 350
 Cys Gln Cys Arg Gly Arg Leu Asn Cys Ile Met Gly Ser Gly Arg Thr
 355 360 365
 Gly Phe Ser Asn Cys Ser Tyr Ile Ser Phe Phe Lys His Ile Ser Ser
 370 375 380
 Gly Ala Thr Cys Leu Asn Asn Ile Pro Gly Leu Gly Tyr Val Leu Lys
 385 390 395 400
 Arg Cys Gly Asn Lys Ile Val Glu Asp Asn Glu Glu Cys Asp Cys Gly
 405 410 415
 Ser Thr Glu Glu Cys Gln Lys Asp Arg Cys Cys Gln Ser Asn Cys Lys
 420 425 430
 Leu Gln Pro Gly Ala Asn Cys Ser Ile Gly Leu Cys Cys His Asp Cys
 435 440 445
 Arg Phe Arg Pro Ser Gly Tyr Val Cys Arg Gln Glu Gly Asn Glu Cys
 450 455 460

Asp Leu Ala Glu Tyr Cys Asp Gly Asn Ser Ser Ser Cys Pro Asn Asp
 465 470 475 480

Val Tyr Lys Gln Asp Gly Thr Pro Cys Lys Tyr Glu Gly Arg Cys Phe
 485 490 495

Arg Lys Gly Cys Arg Ser Arg Tyr Met Gln Cys Gln Ser Ile Phe Gly
 500 505 510

Pro Asp Ala Met Glu Ala Pro Ser Glu Cys Tyr Asp Ala Val Asn Leu
 515 520 525

Ile Gly Asp Gln Phe Gly Asn Cys Glu Ile Thr Gly Ile Arg Asn Phe
 530 535 540

Lys Lys Cys Glu Ser Ala Asn Ser Ile Cys Gly Arg Leu Gln Cys Ile
 545 550 555 560

Asn Val Glu Thr Ile Pro Asp Leu Pro Glu His Thr Thr Ile Ile Ser
 565 570 575

Thr His Leu Gln Ala Glu Asn Leu Met Cys Trp Gly Thr Gly Tyr His
 580 585 590

Leu Ser Met Lys Pro Met Gly Ile Pro Asp Leu Gly Met Ile Asn Asp
 595 600 605

Gly Thr Ser Cys Gly Glu Gly Arg Val Cys Phe Lys Lys Asn Cys Val
 610 615 620

Asn Ser Ser Val Leu Gln Phe Asp Cys Leu Pro Glu Lys Cys Asn Thr
 625 630 635 640

Arg Gly Val Cys Asn Asn Arg Lys Asn Cys His Cys Met Tyr Gly Trp
 645 650 655

Ala Pro Pro Phe Cys Glu Glu Val Gly Tyr Gly Gly Ser Ile Asp Ser
 660 665 670

Gly Pro Pro Gly Leu Leu Arg Gly Ala Ile Pro Ser Ser Ile Trp Val
 675 680 685

Val Ser Ile Ile Met Phe Arg Leu Ile Leu Leu Ile Leu Ser Val Val
 690 695 700

Phe Val Phe Phe Arg Gln Val Ile Gly Asn His Leu Lys Pro Lys Gln
 705 710 715 720

Glu Lys Met Pro Leu Ser Lys Ala Lys Thr Glu Gln Glu Glu Ser Lys
725 730 735

Thr Lys Thr Val Gln Glu Glu Ser Lys Thr Lys Thr Gly Gln Glu Glu
740 745 750

Ser Glu Ala Lys Thr Gly Gln Glu Glu Ser Lys Ala Asn Ile Glu Ser
755 760 765

Lys Arg Pro Lys Ala Lys Ser Val Lys Lys Gln Lys Lys
770 775 780

<210> 287

<211> 729

<212> PRT

<213> Mus musculus

<400> 287

Met Glu Cys Phe Ile Met Leu Gly Ala Asp Ala Arg Thr Leu Met Arg
1 5 10 15

Val Thr Leu Leu Leu Leu Trp Leu Lys Ala Leu Pro Ser Leu Ile Asp
20 25 30

Leu Ser Gln Thr Gly Ser Thr Gln Tyr Leu Ser Ser Pro Glu Val Val
35 40 45

Ile Pro Leu Lys Val Thr Ser Arg Ala Arg Gly Ala Lys Asn Ser Glu
50 55 60

Trp Leu Ser Tyr Ser Leu Val Phe Gly Gly Arg Arg His Val Val His
65 70 75 80

Met Arg Val Lys Lys Leu Leu Val Ser Thr His Ile Pro Val Leu Thr
85 90 95

Tyr Thr Glu Glu His Thr Pro Leu Ser Asp Tyr Pro Phe Val Pro Ser
100 105 110

Asp Cys Tyr Tyr His Gly Tyr Val Glu Gly Ala Leu Glu Ser Leu Val
115 120 125

Ala Phe Ser Ala Cys Asn Gly Gly Leu Gln Gly Val Leu Gln Met Asn
130 135 140

Gly Phe Ser Tyr Glu Ile Glu Pro Ile Lys His Ser Ser Thr Phe Glu

145 150 155 160
 His Leu Val Tyr Thr Leu Asn Asn Asn Lys Thr Gln Phe Pro Pro Met
 165 170 175
 Leu Cys Ser Leu Thr Glu Lys Arg Leu Leu Tyr Gln Pro Phe Gly Val
 180 185 190
 Glu Glu Ala Lys Lys Ser Ala Met Lys Gln Asn Tyr Gly Lys Leu Trp
 195 200 205
 Pro His Met Trp Phe Leu Glu Leu Ala Val Val Val Asp Tyr Gly Phe
 210 215 220
 Phe Thr Asn Ala Gln Gln Asn Leu Ser Lys Val Arg Gly Asp Val Val
 225 230 235 240
 Leu Val Val Asn Met Val Asp Ser Met Tyr Lys Pro Leu Asp Thr Tyr
 245 250 255
 Val Thr Leu Val Gly Ile Glu Ile Trp Asn Arg Gly Asn Val Leu Pro
 260 265 270
 Met Glu Asn Ile His Gln Val Leu Glu Asp Phe Ser His Trp Lys Gln
 275 280 285
 Ile Ser Leu Ser Gln Val His His Asp Ala Ala His Ile Phe Ile Arg
 290 295 300
 Ser Ser Leu Ile Ser Val Leu Gly Ile Ala Tyr Ile Ala Gly Ile Cys
 305 310 315 320
 Arg Pro Pro Leu Asp Cys Gly Val Glu Asn Phe Gln Gly Asp Ala Trp
 325 330 335
 Ser Leu Phe Ala Asn Thr Val Ala His Glu Leu Gly His Thr Phe Gly
 340 345 350
 Met Lys His Asp Glu Glu Ser Cys Ser Cys Gly Lys Ser Gly Cys Val
 355 360 365
 Met Ser Thr Phe Arg Val Pro Ala Glu Arg Phe Thr Asn Cys Ser Tyr
 370 375 380
 Ser Asp Phe Met Lys Thr Thr Leu Asn Gln Gly Thr Cys Leu Tyr Asn
 385 390 395 400
 His Pro Arg Pro Gly Ala Gly Phe Leu Val Lys Arg Cys Gly Asn Gly

405	410	415
Met Val Glu Ser Glu Glu Glu Cys Asp Cys Gly Ser Val Gln Glu Cys		
420	425	430
Glu Gln Asp Pro Cys Cys Phe Leu Asn Cys Thr Leu Arg Pro Ala Ala		
435	440	445
Ala Cys Ser Phe Gly Leu Cys Cys Lys Asp Cys Lys Phe Met Leu Leu		
450	455	460
Gly Glu Leu Cys Arg Pro Lys Ile Asn Glu Cys Asp Leu Pro Glu Trp		
465	470	475
		480
Cys Asn Gly Thr Ser His Gln Cys Pro Glu Asp Gly Tyr Val Gln Asp		
485	490	495
Gly Val Pro Cys Gly Ala Gly Ala Tyr Cys Tyr Gln Lys Gln Cys Asn		
500	505	510
Asn His Asp Gln Gln Cys Arg Glu Ile Phe Gly Lys Gly Ala Arg Ser		
515	520	525
Ala Ser His Asn Cys Tyr Lys Glu Ile Asn Leu Gln Gly Asn Arg Phe		
530	535	540
Gly His Cys Gly Thr Asp Gly Thr Val Phe Leu Lys Cys Arg Met Ser		
545	550	555
		560
Asp Val Phe Cys Gly Lys Val His Cys Glu Asn Val Glu Asp Ile His		
565	570	575
His Pro Gln Ala Pro Tyr Val Leu Gln Asn Ile Tyr Ala Asn Gly Ile		
580	585	590
Thr Cys Trp Ser Thr Gly His Cys Leu Gly Met Gly Val Pro Asp Val		
595	600	605
Gly Glu Val Lys Asp Gly Thr Thr Cys Gly Val Gly Lys Ile Cys Leu		
610	615	620
His Lys Lys Cys Val Ser Leu Ser Val Leu Ser Asn Ala Cys Leu Pro		
625	630	635
		640
Glu Thr Cys Asn Arg Lys Gly Val Cys Asn Asn Lys His His Cys His		
645	650	655
Cys Asp Tyr Gly Trp Ser Pro Pro Phe Cys Leu His Arg Gly Tyr Gly		

Ile Glu Pro Ile Arg His Ser Ala Thr Phe Glu His Leu Val Tyr Lys
 145 150 155 160
 Ile Asn Ser Asn Glu Thr Gln Phe Pro Ala Met Arg Cys Gly Leu Thr
 165 170 175
 Glu Lys Glu Val Ala Arg Gln Gln Leu Glu Phe Glu Glu Ala Glu Asn
 180 185 190
 Ser Ala Leu Glu Pro Lys Ser Ala Gly Asp Trp Trp Thr His Ala Trp
 195 200 205
 Phe Leu Glu Leu Val Val Val Val Asn His Asp Phe Phe Ile Tyr Ser
 210 215 220
 Gln Ser Asn Ile Ser Lys Val Gln Glu Asp Val Phe Leu Val Val Asn
 225 230 235 240
 Ile Val Asp Ser Met Tyr Lys Gln Leu Gly Thr Tyr Ile Ile Leu Ile
 245 250 255
 Gly Ile Glu Ile Trp Asn Gln Gly Asn Val Phe Pro Met Thr Ser Ile
 260 265 270
 Glu Gln Val Leu Asn Asp Phe Ser Gln Trp Lys Gln Ile Ser Leu Ser
 275 280 285
 Gln Leu Gln His Asp Ala Ala His Met Phe Ile Lys Asn Ser Leu Ile
 290 295 300
 Ser Ile Leu Gly Leu Ala Tyr Val Ala Gly Ile Cys Arg Pro Pro Ile
 305 310 315 320
 Asp Cys Gly Val Asp Asn Phe Gln Gly Asp Thr Trp Ser Leu Phe Ala
 325 330 335
 Asn Thr Val Ala His Glu Leu Gly His Thr Leu Gly Met Gln His Asp
 340 345 350
 Glu Glu Phe Cys Phe Cys Gly Glu Arg Gly Cys Ile Met Asn Thr Phe
 355 360 365
 Arg Val Pro Ala Glu Lys Phe Thr Asn Cys Ser Tyr Ala Asp Phe Met
 370 375 380
 Lys Thr Thr Leu Asn Gln Gly Ser Cys Leu His Asn Pro Pro Arg Leu
 385 390 395 400

Gly Glu Ile Phe Met Leu Lys Arg Cys Gly Asn Gly Val Val Glu Arg
 405 410 415
 Glu Glu Gln Cys Asp Cys Gly Ser Val Gln Gln Cys Glu Gln Asp Ala
 420 425 430
 Cys Cys Leu Leu Asn Cys Thr Leu Arg Pro Gly Ala Ala Cys Ala Phe
 435 440 445
 Gly Leu Cys Cys Lys Asp Cys Lys Phe Met Pro Ser Gly Glu Leu Cys
 450 455 460
 Arg Gln Glu Val Asn Glu Cys Asp Leu Pro Glu Trp Cys Asn Gly Thr
 465 470 475 480
 Ser His Gln Cys Pro Glu Asp Arg Tyr Val Gln Asp Gly Ile Pro Cys
 485 490 495
 Ser Asp Ser Ala Tyr Cys Tyr Gln Lys Arg Cys Asn Asn His Asp Gln
 500 505 510
 His Cys Arg Glu Ile Phe Gly Lys Asp Ala Lys Ser Ala Ser Gln Asn
 515 520 525
 Cys Tyr Lys Glu Ile Asn Ser Gln Gly Asn Arg Phe Gly His Cys Gly
 530 535 540
 Ile Asn Gly Thr Thr Tyr Leu Lys Cys His Ile Ser Asp Val Phe Cys
 545 550 555 560
 Gly Arg Val Gln Cys Glu Asn Val Arg Asp Ile Pro Leu Leu Gln Asp
 565 570 575
 His Phe Thr Leu Gln His Thr His Ile Asn Gly Val Thr Cys Trp Gly
 580 585 590
 Ile Asp Tyr His Leu Arg Met Asn Ile Ser Asp Ile Gly Glu Val Lys
 595 600 605
 Asp Gly Thr Val Cys Gly Pro Gly Lys Ile Cys Ile His Lys Lys Cys
 610 615 620
 Val Ser Leu Ser Val Leu Ser His Val Cys Leu Pro Glu Thr Cys Asn
 625 630 635 640
 Met Lys Gly Ile Cys Asn Asn Lys His His Cys His Cys Gly Tyr Gly
 645 650 655

Trp Ser Pro Pro Tyr Cys Gln His Arg Gly Tyr Gly Gly Ser Ile Asp
660 665 670

Ser Gly Pro Ala Ser Ala Lys Arg Gly Val Phe Leu Pro Leu Ile Val
675 680 685

Ile Pro Ser Leu Ser Val Leu Thr Phe Leu Phe Thr Val Gly Leu Leu
690 695 700

Met Tyr Leu Arg Gln Cys Ser Gly Pro Lys Glu Thr Lys Ala His Ser
705 710 715 720

Ser Gly

<210> 289

<211> 722

<212> PRT

<213> Homo sapiens

<400> 289

Met Ala Val Asp Gly Thr Leu Val Tyr Ile Arg Val Thr Leu Leu Leu
1 5 10 15

Leu Trp Leu Gly Val Phe Leu Ser Ile Ser Gly Tyr Cys Gln Ala Gly
20 25 30

Pro Ser Gln His Phe Thr Ser Pro Glu Val Val Ile Pro Leu Lys Val
35 40 45

Ile Ser Arg Gly Arg Ser Ala Lys Ala Pro Gly Trp Leu Ser Tyr Ser
50 55 60

Leu Arg Phe Gly Gly Gln Lys His Val Val His Met Arg Val Lys Lys
65 70 75 80

Leu Leu Val Ser Arg His Leu Pro Val Phe Thr Tyr Thr Asp Glu Arg
85 90 95

Ala Leu Leu Glu Asp Gln Leu Phe Ile Pro Asp Asp Cys Tyr Tyr His
100 105 110

Gly Tyr Val Glu Gly Ala Pro Glu Ser Leu Val Val Phe Ser Ala Cys
115 120 125

Phe Gly Gly Phe Arg Gly Val Leu Lys Ile Ser Gly Leu Thr Tyr Glu
130 135 140

Ile Glu Pro Ile Arg His Ser Ala Thr Phe Glu His Leu Val Tyr Lys
 145 150 155 160
 Val Asn Ser Asn Glu Thr Gln Phe Pro Ala Met Arg Cys Gly Leu Thr
 165 170 175
 Glu Lys Glu Val Ala Arg Gln Gln Leu Glu Phe Glu Glu Ala Glu Asn
 180 185 190
 Ser Ala Leu Glu Pro Lys Ser Ala Gly Asp Trp Trp Thr His Ala Trp
 195 200 205
 Phe Leu Glu Leu Val Val Val Val Asn His Asp Phe Phe Ile Tyr Ser
 210 215 220
 Gln Ser Asn Ile Ser Lys Val Gln Glu Asp Val Phe Leu Val Val Asn
 225 230 235 240
 Ile Val Asp Ser Met Tyr Gln Gln Leu Gly Thr Tyr Ile Ile Leu Ile
 245 250 255
 Gly Ile Glu Ile Trp Asn Gln Gly Asn Val Phe Pro Met Thr Ser Ile
 260 265 270
 Glu Gln Val Leu Asn Asp Phe Ser Gln Trp Lys Gln Ile Ser Leu Ser
 275 280 285
 Gln Leu Gln His Asp Ala Ala His Met Phe Ile Lys Asn Ser Leu Ile
 290 295 300
 Ser Ile Leu Gly Leu Ala Tyr Val Ala Gly Ile Cys Arg Pro Pro Ile
 305 310 315 320
 Asp Cys Gly Val Asp Asn Phe Gln Gly Asp Thr Trp Ser Leu Phe Ala
 325 330 335
 Asn Thr Val Ala His Glu Leu Gly His Thr Leu Gly Met Gln His Asp
 340 345 350
 Glu Glu Phe Cys Phe Cys Gly Glu Arg Gly Cys Ile Met Asn Thr Phe
 355 360 365
 Arg Val Pro Ala Glu Lys Phe Thr Asn Cys Ser Tyr Ala Asp Phe Met
 370 375 380
 Lys Thr Thr Leu Asn Gln Gly Ser Cys Leu His Asn Pro Pro Arg Leu
 385 390 395 400

Gly Glu Ile Phe Met Leu Lys Arg Cys Gly Asn Gly Val Val Glu Arg
 405 410 415
 Glu Glu Gln Cys Asp Cys Gly Ser Val Gln Gln Cys Glu Gln Asp Ala
 420 425 430
 Cys Cys Leu Leu Asn Cys Thr Leu Arg Pro Gly Ala Ala Cys Ala Phe
 435 440 445
 Gly Leu Cys Cys Lys Asp Cys Lys Phe Met Pro Ser Gly Glu Leu Cys
 450 455 460
 Arg Gln Glu Val Asn Glu Cys Asp Leu Pro Glu Trp Cys Asn Gly Thr
 465 470 475 480
 Ser His Gln Cys Pro Glu Asp Arg Tyr Val Gln Asp Gly Ile Pro Cys
 485 490 495
 Ser Asp Ser Ala Tyr Cys Tyr Gln Lys Arg Cys Asn Asn His Asp Gln
 500 505 510
 His Cys Arg Glu Ile Phe Gly Lys Asp Ala Lys Ser Ala Ser Gln Asn
 515 520 525
 Cys Tyr Lys Glu Ile Asn Ser Gln Gly Asn Arg Phe Gly His Cys Gly
 530 535 540
 Ile Asn Gly Thr Thr Tyr Leu Lys Cys His Ile Ser Asp Val Phe Cys
 545 550 555 560
 Gly Arg Val Gln Cys Glu Asn Val Arg Asp Ile Pro Leu Leu Gln Asp
 565 570 575
 His Phe Thr Leu Gln His Thr His Ile Asn Gly Val Thr Cys Trp Gly
 580 585 590
 Ile Asp Tyr His Leu Arg Met Asn Ile Ser Asp Ile Gly Glu Val Lys
 595 600 605
 Asp Gly Thr Val Cys Gly Pro Gly Lys Ile Cys Ile His Lys Lys Cys
 610 615 620
 Val Ser Leu Ser Val Leu Ser His Val Cys Leu Pro Glu Thr Cys Asn
 625 630 635 640
 Met Lys Gly Ile Cys Asn Asn Lys His His Cys His Cys Gly Tyr Gly
 645 650 655

Trp Ser Pro Pro Tyr Cys Gln His Arg Gly Tyr Gly Gly Ser Ile Asp
660 665 670

Ser Gly Pro Ala Ser Ala Lys Arg Gly Val Phe Leu Pro Leu Ile Val
675 680 685

Ile Pro Ser Leu Ser Val Leu Thr Phe Leu Phe Thr Val Gly Leu Leu
690 695 700

Met Tyr Leu Arg Gln Cys Ser Gly Pro Lys Glu Thr Lys Ala His Ser
705 710 715 720

Ser Gly

<210> 290

<211> 85

<212> PRT

<213> Homo sapiens

<400> 290

His Leu Trp Pro Lys Arg Leu Leu Leu Pro Arg His Leu Arg Val Phe
1 5 10 15

Ser Phe Thr Glu His Gly Glu Leu Leu Glu Asp His Pro Tyr Ile Pro
20 25 30

Lys Asp Cys Asn Tyr Met Gly Ser Val Lys Glu Ser Leu Asp Ser Lys
35 40 45

Ala Thr Ile Ser Thr Cys Met Gly Gly Leu Arg Gly Val Phe Asn Ile
50 55 60

Asp Ala Lys His Tyr Gln Ile Glu Pro Leu Lys Ala Ser Pro Ser Phe
65 70 75 80

Glu His Val Val Tyr
85

<210> 291

<211> 84

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Reprolysin
family propeptide domain sequence

<400> 291

His	Leu	Glu	Lys	Asn	Arg	Ser	Leu	Leu	Ala	Pro	Asp	Phe	Thr	Val	Thr		
1				5					10					15			
Thr	Tyr	Asp	Asp	Asp	Gly	Thr	Leu	Val	Thr	Glu	His	Pro	Leu	Ile	Gln		
			20				25						30				
Asp	His	Cys	Tyr	Tyr	Gln	Gly	Tyr	Val	Glu	Gly	Tyr	Pro	Asn	Ser	Ala		
		35				40						45					
Val	Ser	Leu	Ser	Thr	Cys	Ser	Gly	Leu	Arg	Gly	Ile	Leu	Gln	Leu	Glu		
	50					55					60						
Asn	Leu	Ser	Tyr	Gly	Ile	Glu	Pro	Leu	Glu	Ser	Ser	Asp	Gly	Phe	Glu		
65					70					75					80		
His	Ile	Ile	Tyr														

<210> 292

<211> 44

<212> PRT

<213> Homo sapiens

<400> 292

Asn	Leu	Met	Cys	Trp	Gly	Thr	Gly	Tyr	His	Leu	Ser	Met	Lys	Pro	Met		
1				5					10					15			
Gly	Ile	Pro	Asp	Leu	Gly	Met	Ile	Asn	Asp	Gly	Thr	Ser	Cys	Gly	Glu		
			20				25						30				
Gly	Arg	Val	Cys	Phe	Lys	Lys	Asn	Cys	Val	Asn	Ser						
		35				40											

<210> 293

<211> 41

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: ADAM
Cysteine-Rich Domain sequence

<400> 293

Gly Leu Val Cys Trp Ser Leu Asp Tyr His Leu Gly Ser Asp Ile Pro
1 5 10 15

Asp Leu Gly Met Val Lys Asp Gly Thr Lys Cys Gly Pro Gly Lys Val
20 25 30

Cys Ile Asn Gly Gln Cys Val Asp Val
35 40

<210> 294

<211> 379

<212> PRT

<213> Homo sapiens

<400> 294

Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Gly Val Gly
1 5 10 15

Gly Glu Arg Ser Ser Arg Pro Ala Pro Ser Val Ala Pro Glu Pro Asp
20 25 30

Gly Cys Pro Val Cys Val Trp Arg Gln His Ser Arg Glu Leu Arg Leu
35 40 45

Glu Ser Ile Lys Ser Gln Ile Leu Ser Lys Leu Arg Leu Lys Glu Ala
50 55 60

Pro Asn Ile Ser Arg Glu Val Val Lys Gln Leu Leu Pro Lys Ala Pro
65 70 75 80

Pro Leu Gln Gln Ile Leu Asp Leu His Asp Phe Gln Gly Asp Ala Leu
85 90 95

Gln Pro Glu Asp Phe Leu Glu Glu Asp Glu Tyr His Ala Thr Thr Glu
100 105 110

Thr Val Ile Ser Met Ala Gln Glu Thr Asp Pro Ala Val Gln Thr Asp
115 120 125

Gly Ser Pro Leu Cys Cys His Phe His Phe Ser Pro Lys Val Met Phe
130 135 140

Thr Lys Val Leu Lys Ala Gln Leu Trp Val Tyr Leu Arg Pro Val Pro
145 150 155 160

Arg Pro Ala Thr Val Tyr Leu Gln Ile Leu Arg Leu Lys Pro Leu Thr

	165		170		175										
Gly	Glu	Gly	Thr	Ala	Gly	Gly	Gly	Gly	Gly	Gly	Arg	Arg	His	Ile	Arg
	180						185						190		
Ile	Arg	Ser	Leu	Lys	Ile	Glu	Leu	His	Ser	Arg	Ser	Gly	His	Trp	Gln
	195						200					205			
Ser	Ile	Asp	Phe	Lys	Gln	Val	Leu	His	Ser	Trp	Phe	Arg	Gln	Pro	Gln
	210					215					220				
Ser	Asn	Trp	Gly	Ile	Glu	Ile	Asn	Ala	Phe	Asp	Pro	Ser	Gly	Thr	Asp
225					230					235					240
Leu	Ala	Val	Thr	Ser	Leu	Gly	Pro	Gly	Ala	Glu	Gly	Leu	His	Pro	Phe
				245					250					255	
Met	Glu	Leu	Arg	Val	Leu	Glu	Asn	Thr	Lys	Arg	Ser	Arg	Arg	Asn	Leu
			260					265						270	
Gly	Leu	Asp	Cys	Asp	Glu	His	Ser	Ser	Glu	Ser	Arg	Cys	Cys	Arg	Tyr
	275						280					285			
Pro	Leu	Thr	Val	Asp	Phe	Glu	Ala	Phe	Gly	Trp	Asp	Trp	Ile	Ile	Ala
	290					295					300				
Pro	Lys	Arg	Tyr	Lys	Ala	Asn	Tyr	Cys	Ser	Gly	Gln	Cys	Glu	Tyr	Met
305					310					315					320
Phe	Met	Gln	Lys	Tyr	Pro	His	Thr	His	Leu	Val	Gln	Gln	Ala	Asn	Pro
				325					330					335	
Arg	Gly	Ser	Ala	Gly	Pro	Cys	Cys	Thr	Pro	Thr	Lys	Met	Ser	Pro	Ile
			340					345					350		
Asn	Met	Leu	Tyr	Phe	Asn	Asp	Lys	Gln	Gln	Ile	Ile	Tyr	Gly	Lys	Ile
	355						360					365			
Pro	Gly	Met	Val	Val	Asp	Arg	Cys	Gly	Cys	Ser					
	370					375									

<210> 295

<211> 407

<212> PRT

<213> Homo sapiens

<400> 295

Met Val Leu Ala Ala Pro Leu Leu Leu Gly Phe Leu Leu Leu Ala Leu
 1 5 10 15
 Glu Leu Arg Pro Arg Gly Glu Ala Ala Glu Gly Pro Ala Ala Ala Ala
 20 25 30
 Ala Ala Ala Ala Ala Ala Ala Ala Gly Val Gly Gly Glu Arg Ser
 35 40 45
 Ser Arg Pro Ala Pro Ser Val Ala Pro Glu Pro Asp Gly Cys Pro Val
 50 55 60
 Cys Val Trp Arg Gln His Ser Arg Glu Leu Arg Leu Glu Ser Ile Lys
 65 70 75 80
 Ser Gln Ile Leu Ser Lys Leu Arg Leu Lys Glu Ala Pro Asn Ile Ser
 85 90 95
 Arg Glu Val Val Lys Gln Leu Leu Pro Lys Ala Pro Pro Leu Gln Gln
 100 105 110
 Ile Leu Asp Leu His Asp Phe Gln Gly Asp Ala Leu Gln Pro Glu Asp
 115 120 125
 Phe Leu Glu Glu Asp Glu Tyr His Ala Thr Thr Glu Thr Val Ile Ser
 130 135 140
 Met Ala Gln Glu Thr Asp Pro Ala Val Gln Thr Asp Gly Ser Pro Leu
 145 150 155 160
 Cys Cys His Phe His Phe Ser Pro Lys Val Met Phe Thr Lys Val Leu
 165 170 175
 Lys Ala Gln Leu Trp Val Tyr Leu Arg Pro Val Pro Arg Pro Ala Thr
 180 185 190
 Val Tyr Leu Gln Ile Leu Arg Leu Lys Pro Leu Thr Gly Glu Gly Thr
 195 200 205
 Ala Gly Gly Gly Gly Gly Gly Arg Arg His Ile Arg Ile Arg Ser Leu
 210 215 220
 Lys Ile Glu Leu His Ser Arg Ser Gly His Trp Gln Ser Ile Asp Phe
 225 230 235 240
 Lys Gln Val Leu His Ser Trp Phe Arg Gln Pro Gln Ser Asn Trp Gly
 245 250 255

Ile Glu Ile Asn Ala Phe Asp Pro Ser Gly Thr Asp Leu Ala Val Thr
 260 265 270
 Ser Leu Gly Pro Gly Ala Glu Gly Leu His Pro Phe Met Glu Leu Arg
 275 280 285
 Val Leu Glu Asn Thr Lys Arg Ser Arg Arg Asn Leu Gly Leu Asp Cys
 290 295 300
 Asp Glu His Ser Ser Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr Val
 305 310 315 320
 Asp Phe Glu Ala Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg Tyr
 325 330 335
 Lys Ala Asn Tyr Cys Ser Gly Gln Cys Glu Tyr Met Phe Met Gln Lys
 340 345 350
 Tyr Pro His Thr His Leu Val Gln Gln Ala Asn Pro Arg Gly Ser Ala
 355 360 365
 Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr
 370 375 380
 Phe Asn Asp Lys Gln Gln Ile Ile Tyr Gly Lys Ile Pro Gly Met Val
 385 390 395 400
 Val Asp Arg Cys Gly Cys Ser
 405

<210> 296
 <211> 405
 <212> PRT
 <213> Mus musculus

<400> 296
 Met Val Leu Ala Ala Pro Leu Leu Leu Gly Phe Leu Leu Leu Ala Leu
 1 5 10 15
 Glu Leu Arg Pro Arg Gly Glu Ala Ala Glu Gly Pro Ala Ala Ala Ala
 20 25 30
 Ala Ala Ala Ala Ala Ala Gly Val Gly Gly Glu Arg Ser Ser Arg
 35 40 45
 Pro Ala Pro Ser Ala Pro Pro Glu Pro Asp Gly Cys Pro Val Cys Val
 50 55 60

Trp Arg Gln His Ser Arg Glu Leu Arg Leu Glu Ser Ile Lys Ser Gln
 65 70 75 80
 Ile Leu Ser Lys Leu Arg Leu Lys Glu Ala Pro Asn Ile Ser Arg Glu
 85 90 95
 Val Val Lys Gln Leu Leu Pro Lys Ala Pro Pro Leu Gln Gln Ile Leu
 100 105 110
 Asp Leu His Asp Phe Gln Gly Asp Ala Leu Gln Pro Glu Asp Phe Leu
 115 120 125
 Glu Glu Asp Glu Tyr His Ala Thr Thr Glu Thr Val Ile Ser Met Ala
 130 135 140
 Gln Glu Thr Asp Pro Ala Val Gln Thr Asp Gly Ser Pro Leu Cys Cys
 145 150 155 160
 His Phe His Phe Ser Pro Lys Val Met Phe Thr Lys Val Leu Lys Ala
 165 170 175
 Gln Leu Trp Val Tyr Leu Arg Pro Val Pro Arg Pro Ala Thr Val Tyr
 180 185 190
 Leu Gln Ile Leu Arg Leu Lys Pro Leu Thr Gly Glu Gly Thr Ala Gly
 195 200 205
 Gly Gly Gly Gly Gly Arg Arg His Ile Arg Ile Arg Ser Leu Lys Ile
 210 215 220
 Glu Leu His Ser Arg Ser Gly His Trp Gln Ser Ile Asp Phe Lys Gln
 225 230 235 240
 Val Leu His Ser Trp Phe Arg Gln Pro Gln Ser Asn Trp Gly Ile Glu
 245 250 255
 Ile Asn Ala Phe Asp Pro Ser Gly Thr Asp Leu Ala Val Thr Ser Leu
 260 265 270
 Gly Pro Gly Ala Glu Gly Leu His Pro Phe Met Glu Leu Arg Val Leu
 275 280 285
 Glu Asn Thr Lys Arg Ser Arg Arg Asn Leu Gly Leu Asp Cys Asp Glu
 290 295 300
 His Ser Ser Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr Val Asp Phe
 305 310 315 320

Glu Ala Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg Tyr Lys Ala
325 330 335

Asn Tyr Cys Ser Gly Gln Cys Glu Tyr Met Phe Met Gln Lys Tyr Pro
340 345 350

His Thr His Leu Val Gln Gln Ala Asn Pro Arg Gly Ser Ala Gly Pro
355 360 365

Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr Phe Asn
370 375 380

Asp Lys Gln Gln Ile Ile Tyr Gly Lys Ile Pro Gly Met Val Val Asp
385 390 395 400

Arg Cys Gly Cys Ser
405

<210> 297

<211> 405

<212> PRT

<213> Mus musculus

<400> 297

Met Val Leu Ala Ala Pro Leu Leu Leu Gly Phe Leu Leu Leu Ala Leu
1 5 10 15

Glu Leu Arg Pro Arg Gly Glu Ala Ala Glu Gly Pro Ala Ala Ala Ala
20 25 30

Ala Ala Ala Ala Ala Ala Gly Val Gly Gly Glu Arg Ser Ser Arg
35 40 45

Pro Ala Pro Ser Ala Pro Pro Glu Pro Asp Gly Cys Pro Val Cys Val
50 55 60

Trp Arg Gln His Ser Arg Glu Leu Arg Leu Glu Ser Ile Lys Ser Gln
65 70 75 80

Ile Leu Ser Lys Leu Arg Leu Lys Glu Ala Pro Asn Ile Ser Arg Glu
85 90 95

Val Val Lys Gln Leu Leu Pro Lys Ala Pro Pro Leu Gln Gln Ile Leu
100 105 110

Asp Leu His Asp Phe Gln Gly Asp Ala Leu Gln Pro Glu Asp Phe Leu

115	120	125
Glu Glu Asp Glu Tyr His Ala Thr Thr Glu Thr Val Ile Ser Met Ala		
130	135	140
Gln Glu Thr Asp Pro Ala Val Gln Thr Asp Gly Ser Pro Leu Cys Cys		
145	150	155 160
His Phe His Phe Ser Pro Lys Val Met Phe Asn Lys Val Leu Lys Ala		
	165 170	175
Gln Leu Trp Val Tyr Leu Arg Pro Val Pro Arg Pro Ala Thr Val Tyr		
	180 185	190
Leu Gln Ile Leu Arg Leu Lys Pro Leu Thr Gly Glu Gly Thr Ala Gly		
	195 200	205
Gly Gly Gly Gly Gly Arg Arg His Ile Arg Ile Arg Ser Leu Lys Ile		
	210 215	220
Glu Leu His Ser Arg Ser Gly His Trp Gln Ser Ile Asp Phe Lys Gln		
225	230 235	240
Val Leu His Ser Trp Phe Arg Gln Pro Gln Ser Asn Trp Gly Ile Glu		
	245 250	255
Ile Asn Ala Phe Asp Pro Ser Gly Thr Asp Leu Ala Val Thr Ser Leu		
	260 265	270
Gly Pro Gly Ala Glu Gly Leu His Pro Phe Met Glu Leu Arg Val Leu		
	275 280	285
Glu Asn Thr Lys Arg Ser Arg Arg Asn Leu Gly Leu Asp Cys Asp Glu		
290	295 300	
His Ser Ser Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr Val Asp Phe		
305	310 315	320
Glu Ala Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg Tyr Lys Ala		
	325 330	335
Asn Tyr Cys Ser Gly Gln Cys Glu Tyr Met Phe Met Gln Lys Tyr Pro		
	340 345	350
His Thr His Leu Val Gln Gln Ala Asn Pro Arg Gly Ser Ala Gly Pro		
	355 360	365
Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu Tyr Phe Asn		

370

375

380

Asp Lys Gln Gln Ile Ile Tyr Gly Lys Ile Pro Gly Met Val Val Asp
 385 390 395 400

Arg Cys Gly Cys Ser
 405

<210> 298

<211> 345

<212> PRT

<213> Rattus norvegicus

<400> 298

Pro Glu Pro Asp Gly Cys Pro Val Cys Val Trp Arg Gln His Ser Arg
 1 5 10 15

Arg Val Arg Leu Gly Ser Ile Lys Ser Gln Ile Leu Ser Lys Leu Arg
 20 25 30

Leu Lys Glu Ala Pro Asn Ile Ser Arg Glu Val Val Lys Gln Leu Leu
 35 40 45

Pro Lys Ala Pro Pro Leu Gln Gln Ile Leu Asp Leu His Asp Phe Gln
 50 55 60

Gly Asp Ala Leu Gln Pro Glu Asp Phe Leu Glu Glu Asp Glu Tyr His
 65 70 75 80

Ala Thr Thr Glu Thr Val Ile Ser Met Ala Gln Glu Thr Asp Pro Ala
 85 90 95

Val Gln Thr Asp Gly Ser Pro Leu Cys Cys His Phe His Phe Ser Pro
 100 105 110

Lys Val Met Phe Thr Lys Val Leu Lys Ala Gln Leu Trp Val Tyr Leu
 115 120 125

Arg Pro Val Pro Arg Pro Ala Thr Val Tyr Leu Gln Ile Leu Arg Leu
 130 135 140

Lys Pro Leu Thr Gly Glu Gly Thr Ala Gly Gly Gly Gly Gly Gly Arg
 145 150 155 160

Arg His Ile Arg Ile Arg Ser Leu Lys Ile Glu Leu His Ser Arg Ser
 165 170 175

Gly His Trp Gln Ser Ile Asp Phe Lys Gln Val Leu His Ser Trp Phe
 180 185 190
 Arg Gln Pro Gln Ser Asn Trp Gly Ile Glu Ile Asn Ala Phe Asp Pro
 195 200 205
 Ser Gly Thr Asp Leu Ala Val Thr Ser Leu Gly Pro Gly Ala Glu Gly
 210 215 220
 Cys His Pro Phe Met Glu Leu Arg Val Leu Glu Asn Thr Lys Arg Ser
 225 230 235 240
 Arg Arg Asn Leu Gly Leu Asp Cys Asp Glu His Ser Ser Glu Ser Arg
 245 250 255
 Cys Cys Arg Tyr Pro Leu Thr Val Asp Phe Glu Ala Ser Gly Trp Asp
 260 265 270
 Trp Ile Ile Ala Pro Lys Arg Tyr Lys Ala Asn Tyr Cys Ser Gly Gln
 275 280 285
 Cys Glu Tyr Met Phe Met Gln Lys Tyr Pro His Thr His Leu Val Gln
 290 295 300
 Gln Ala Asn Pro Arg Gly Ser Ala Gly Pro Cys Cys Thr Pro Thr Lys
 305 310 315 320
 Met Ser Pro Ile Asn Met Leu Tyr Phe Asn Asp Lys Gln Gln Ile Ile
 325 330 335
 Tyr Gly Lys Ile Pro Gly Met Val Val
 340 345

<210> 299

<211> 95

<212> PRT

<213> Homo sapiens

<400> 299

Cys Cys Arg Tyr Pro Leu Thr Val Asp Phe Glu Ala Phe Gly Trp Asp
 1 5 10 15
 Trp Ile Ile Ala Pro Lys Arg Tyr Lys Ala Asn Tyr Cys Ser Gly Gln
 20 25 30
 Cys Glu Tyr Met Phe Met Gln Lys Tyr Pro His Thr His Leu Val Gln
 35 40 45

Gln Ala Asn Pro Arg Gly Ser Ala Gly Pro Cys Cys Thr Pro Thr Lys
50 55 60

Met Ser Pro Ile Asn Met Leu Tyr Phe Asn Asp Lys Gln Gln Ile Ile
65 70 75 80

Tyr Gly Lys Ile Pro Gly Met Val Val Asp Arg Cys Gly Cys Ser
85 90 95

<210> 300

<211> 102

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Transforming
growth factor beta like domain sequence

<400> 300

Cys Arg Arg His Asp Leu Tyr Val Asp Phe Lys Asp Leu Gly Trp Asp
1 5 10 15

Asp Trp Ile Ile Ala Pro Lys Gly Tyr Asn Ala Tyr Tyr Cys Glu Gly
20 25 30

Glu Cys Pro Phe Pro Leu Ser Glu Arg Leu Asn Ala Thr Asn His Ala
35 40 45

Ile Val Gln Ser Leu Val His Ala Leu Asp Pro Gly Ala Val Pro Lys
50 55 60

Pro Cys Cys Val Pro Thr Lys Leu Ser Pro Leu Ser Met Leu Tyr Tyr
65 70 75 80

Asp Asp Asp Gly Asn Val Val Leu Arg Asn Tyr Pro Asn Met Val Val
85 90 95

Glu Glu Cys Gly Cys Arg
100

<210> 301

<211> 102

<212> PRT

<213> Homo sapiens

<400> 301

Cys Arg Leu Arg Ser Leu Tyr Val Asp Phe Arg Asp Leu Gly Trp Gly
1 5 10 15

Asp Trp Ile Ile Ala Pro Glu Gly Tyr Ile Ala Asn Tyr Cys Ser Gly
20 25 30

Ser Cys Pro Phe Pro Leu Arg Asp Asp Leu Asn Leu Ser Asn His Ala
35 40 45

Ile Leu Gln Thr Leu Val Arg Leu Arg Asn Pro Arg Ala Val Pro Gln
50 55 60

Pro Cys Cys Val Pro Thr Lys Leu Ser Pro Leu Ser Met Leu Tyr Leu
65 70 75 80

Asp Asp Asn Ser Asn Val Val Leu Arg Leu Tyr Pro Asn Met Ser Val
85 90 95

Lys Glu Cys Gly Cys Arg
100

<210> 302

<211> 105

<212> PRT

<213> Homo sapiens

<400> 302

Cys Pro Val Cys Val Trp Arg Gln His Ser Arg Glu Leu Arg Leu Glu
1 5 10 15

Ser Ile Lys Ser Gln Ile Leu Ser Lys Leu Arg Leu Lys Glu Ala Pro
20 25 30

Asn Ile Ser Arg Glu Val Val Lys Gln Leu Leu Pro Lys Ala Pro Pro
35 40 45

Leu Gln Gln Ile Leu Asp Leu His Asp Phe Gln Gly Asp Ala Leu Gln
50 55 60

Pro Glu Asp Phe Leu Glu Glu Asp Glu Tyr His Ala Thr Thr Glu Thr
65 70 75 80

Val Ile Ser Met Ala Gln Glu Thr Asp Pro Ala Val Gln Thr Asp Gly
85 90 95

Ser Pro Leu Cys Cys His Phe His Phe

100

105

<210> 303

<211> 105

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: TGF-beta
propeptide domain sequence

<400> 303

Cys Arg Pro Leu Asp Leu Arg Arg Ser Gln Lys Gln Asp Arg Leu Glu
1 5 10 15

Ala Ile Glu Gly Gln Ile Leu Ser Lys Leu Gly Leu Arg Arg Arg Pro
20 25 30

Arg Pro Ser Lys Glu Pro Met Val Val Pro Glu Tyr Met Leu Asp Leu
35 40 45

Tyr Asn Ala Leu Ser Glu Leu Glu Glu Gly Lys Val Gly Arg Val Pro
50 55 60

Glu Ile Ser Asp Tyr Asp Gly Arg Glu Ala Gly Arg Ala Asn Thr Ile
65 70 75 80

Arg Ser Phe Ser His Leu Glu Ser Asp Asp Phe Glu Glu Ser Thr Pro
85 90 95

Glu Ser His Arg Lys Arg Phe Arg Phe
100 105

<210> 304

<211> 404

<212> PRT

<213> Homo sapiens

<400> 304

Met Ser Val Lys Pro Ser Trp Gly Pro Gly Pro Ser Glu Gly Val Thr
1 5 10 15

Ala Val Pro Thr Ser Asp Leu Gly Glu Ile His Asn Trp Thr Glu Leu
20 25 30

Leu Asp Leu Phe Asn His Thr Leu Ser Glu Cys His Val Glu Leu Ser

35	40	45
Gln Ser Thr Lys Arg Val Val Leu Phe Ala Leu Tyr Leu Ala Met Phe		
50	55	60
Val Val Gly Leu Val Glu Asn Leu Leu Val Ile Cys Val Asn Trp Arg		
65	70	75 80
Gly Ser Gly Arg Ala Gly Leu Met Asn Leu Tyr Ile Leu Asn Met Ala		
85	90	95
Ile Ala Asp Leu Gly Ile Val Leu Ser Leu Pro Val Trp Met Leu Glu		
100	105	110
Val Thr Leu Asp Tyr Thr Trp Leu Trp Gly Ser Phe Ser Cys Arg Phe		
115	120	125
Thr His Tyr Phe Tyr Phe Val Asn Met Tyr Ser Ser Ile Phe Phe Leu		
130	135	140
Val Cys Leu Ser Val Asp Arg Tyr Val Thr Leu Thr Ser Ala Ser Pro		
145	150	155 160
Ser Trp Gln Arg Tyr Gln His Arg Val Arg Arg Ala Met Cys Ala Gly		
165	170	175
Ile Trp Val Leu Ser Ala Ile Ile Pro Leu Pro Glu Val Val His Ile		
180	185	190
Gln Leu Val Glu Gly Pro Glu Pro Met Cys Leu Phe Met Ala Pro Phe		
195	200	205
Glu Thr Tyr Ser Thr Trp Ala Leu Ala Val Ala Leu Ser Thr Thr Ile		
210	215	220
Leu Gly Phe Leu Leu Pro Phe Pro Leu Ile Thr Val Phe Asn Val Leu		
225	230	235 240
Thr Ala Cys Arg Leu Arg Gln Pro Gly Gln Pro Lys Ser Arg Arg His		
245	250	255
Cys Leu Leu Leu Cys Ala Tyr Val Ala Val Phe Val Met Cys Trp Leu		
260	265	270
Pro Tyr His Val Thr Leu Leu Leu Leu Thr Leu His Gly Thr His Ile		
275	280	285
Ser Leu His Cys His Leu Val His Leu Leu Tyr Phe Phe Tyr Asp Val		

290 295 300
 Ile Asp Cys Phe Ser Met Leu His Cys Val Ile Asn Pro Ile Leu Tyr
 305 310 315 320
 Asn Phe Leu Ser Pro His Phe Arg Gly Arg Leu Leu Asn Ala Val Val
 325 330 335
 His Tyr Leu Pro Lys Asp Gln Thr Lys Ala Gly Thr Cys Ala Ser Ser
 340 345 350
 Ser Ser Cys Ser Thr Gln His Ser Ile Ile Ile Thr Lys Gly Asp Ser
 355 360 365
 Gln Pro Ala Ala Ala Ala Pro His Pro Glu Pro Ser Leu Ser Phe Gln
 370 375 380
 Ala His His Leu Leu Pro Asn Thr Ser Pro Ile Ser Pro Thr Gln Pro
 385 390 395 400
 Leu Thr Pro Ser

<210> 305
 <211> 395
 <212> PRT
 <213> Mus musculus

<400> 305
 Met Ser Val Ile Pro Ser Pro Arg Pro Val Ser Thr Leu Glu Pro Asp
 1 5 10 15
 Asn Asp Phe Arg Asp Ile His Asn Trp Thr Glu Leu Leu His Leu Phe
 20 25 30
 Asn Gln Thr Phe Thr Asp Cys His Ile Glu Phe Asn Glu Asn Thr Lys
 35 40 45
 His Val Val Leu Phe Val Phe Tyr Leu Ala Ile Phe Val Val Gly Leu
 50 55 60
 Val Glu Asn Val Leu Val Ile Cys Val Asn Cys Arg Arg Ser Gly Arg
 65 70 75 80
 Val Gly Met Leu Asn Leu Tyr Ile Leu Asn Met Ala Ile Ala Asp Leu
 85 90 95

Gly Ile Ile Leu Ser Leu Pro Val Trp Met Leu Glu Val Met Leu Glu
 100 105 110
 Tyr Thr Trp Leu Trp Gly Ser Phe Ser Cys Arg Phe Ile His Tyr Phe
 115 120 125
 Tyr Leu Val Asn Met Tyr Ser Ser Ile Phe Phe Leu Thr Cys Leu Ser
 130 135 140
 Ile Asp Arg Tyr Val Thr Leu Thr Asn Thr Ser Pro Ser Trp Gln Arg
 145 150 155 160
 His Gln His Arg Ile Arg Arg Ala Val Cys Ala Gly Val Trp Val Leu
 165 170 175
 Ser Ala Ile Ile Pro Leu Pro Glu Val Val His Ile Gln Leu Leu Asp
 180 185 190
 Gly Ser Glu Pro Met Cys Leu Phe Leu Ala Pro Phe Glu Thr Tyr Ser
 195 200 205
 Ala Trp Ala Leu Ala Val Ala Leu Ser Ala Thr Ile Leu Gly Phe Leu
 210 215 220
 Leu Pro Phe Leu Leu Ile Ala Val Phe Asn Ile Leu Thr Ala Cys Arg
 225 230 235 240
 Leu Arg Arg Gln Arg Gln Thr Glu Ser Arg Arg His Cys Leu Leu Met
 245 250 255
 Trp Ala Tyr Ile Val Val Phe Ala Ile Cys Trp Leu Pro Tyr Gln Val
 260 265 270
 Thr Met Leu Leu Leu Thr Leu His Gly Thr His Ile Phe Leu His Cys
 275 280 285
 His Leu Val Asn Leu Leu Tyr Phe Phe Tyr Glu Ile Ile Asp Cys Phe
 290 295 300
 Ser Met Leu His Cys Val Ala Asn Pro Ile Leu Tyr Asn Phe Leu Ser
 305 310 315 320
 Pro Ser Phe Arg Gly Arg Leu Leu Ser Leu Val Val Arg Tyr Leu Pro
 325 330 335
 Lys Glu Gln Ala Arg Ala Ala Gly Gly Arg Ala Ser Ser Ser Ser Ser
 340 345 350

Thr Gln His Ser Ile Ile Ile Thr Lys Glu Gly Ser Leu Pro Leu Gln
 355 360 365
 Arg Ile Ser Thr Pro Thr Pro Ser Glu Thr Phe Arg Arg Pro Leu Arg
 370 375 380
 Leu Gln Thr Pro His Leu His Ser Ala Ile Leu
 385 390 395
 <210> 306
 <211> 398
 <212> PRT
 <213> Rattus norvegicus
 <400> 306
 Met Ser Val Ile Pro Ser Ser Arg Pro Val Ser Thr Leu Ala Pro Asp
 1 5 10 15
 Asn Asp Phe Arg Glu Ile His Asn Trp Thr Glu Leu Leu His Leu Phe
 20 25 30
 Asn Gln Thr Phe Ser Asp Cys Arg Met Glu Leu Asn Glu Asn Thr Lys
 35 40 45
 Gln Val Val Leu Phe Val Phe Tyr Leu Ala Ile Phe Val Val Gly Leu
 50 55 60
 Val Glu Asn Val Leu Val Ile Cys Val Asn Cys Arg Arg Ser Gly Arg
 65 70 75 80
 Val Gly Met Leu Asn Leu Tyr Ile Leu Asn Met Ala Val Ala Asp Leu
 85 90 95
 Gly Ile Ile Leu Ser Leu Pro Val Trp Met Leu Glu Val Met Leu Glu
 100 105 110
 Tyr Thr Trp Leu Trp Gly Ser Phe Ser Cys Arg Phe Ile His Tyr Phe
 115 120 125
 Tyr Leu Ala Asn Met Tyr Ser Ser Ile Phe Phe Leu Thr Cys Leu Ser
 130 135 140
 Ile Asp Arg Tyr Val Thr Leu Thr Asn Thr Ser Pro Ser Trp Gln Arg
 145 150 155 160
 His Gln His Arg Ile Arg Arg Ala Val Cys Ala Gly Val Trp Val Leu
 165 170 175

Ser Ala Ile Ile Pro Leu Pro Glu Val Val His Ile Gln Leu Leu Asp
 180 185 190
 Gly Ser Glu Pro Met Cys Leu Phe Leu Ala Pro Phe Glu Thr Tyr Ser
 195 200 205
 Ala Trp Ala Leu Ala Val Ala Leu Ser Ala Thr Ile Leu Gly Phe Leu
 210 215 220
 Leu Pro Phe Pro Leu Ile Ala Val Phe Asn Ile Leu Ser Ala Cys Arg
 225 230 235 240
 Leu Arg Arg Gln Gly Gln Thr Glu Ser Arg Arg His Cys Leu Leu Met
 245 250 255
 Trp Ala Tyr Ile Val Val Phe Ala Ile Cys Trp Leu Pro Tyr His Val
 260 265 270
 Thr Met Leu Leu Leu Thr Leu His Thr Thr His Ile Phe Leu His Cys
 275 280 285
 Asn Leu Val Asn Phe Leu Tyr Phe Phe Tyr Glu Ile Thr Asp Cys Phe
 290 295 300
 Ser Met Leu His Cys Val Ala Asn Pro Ile Leu Tyr Asn Phe Leu Ser
 305 310 315 320
 Pro Ser Phe Arg Gly Arg Leu Leu Ser Leu Val Val Arg Tyr Leu Pro
 325 330 335
 Lys Glu Gln Ala Arg Ala Ala Gly Gly Arg Ala Ser Ser Ser Ser Ser
 340 345 350
 Thr Gln His Ser Ile Ile Ile Thr Lys Glu Gly Ser Leu Leu Ala Ala
 355 360 365
 Ala Asp Leu His Thr His Ala Ile Arg Asn Val Gln Ala Ser Ser Leu
 370 375 380
 Pro Pro Asn Thr Ser Pro Thr Leu Cys Asn Ser Ile Ala Ser
 385 390 395

<210> 307

<211> 395

<212> PRT

<213> Rattus norvegicus

<400> 307

Met Ser Val Ile Pro Ser Ser Glu Ala Val Ser Thr Leu Ala Pro Asp
1 5 10 15

Asn Asp Phe Arg Glu Ile His Asn Trp Thr Glu Leu Leu His Leu Phe
20 25 30

Asn Gln Thr Phe Ser Asp Cys His Met Glu Leu Asn Glu Asn Thr Lys
35 40 45

Gln Val Val Leu Phe Val Phe Tyr Leu Ala Ile Phe Val Val Gly Leu
50 55 60

Val Glu Asn Val Leu Val Ile Cys Val Asn Cys Arg Arg Ser Gly Arg
65 70 75 80

Val Gly Met Leu Asn Leu Tyr Ile Leu Asn Met Ala Val Ala Asp Leu
85 90 95

Gly Ile Ile Leu Ser Leu Pro Val Trp Met Leu Glu Val Met Leu Glu
100 105 110

Tyr Thr Trp Leu Trp Gly Ser Phe Ser Cys Arg Phe Ile His Tyr Phe
115 120 125

Tyr Leu Ala Asn Met Tyr Ser Ser Ile Phe Phe Leu Thr Cys Leu Ser
130 135 140

Ile Asp Arg Tyr Val Thr Leu Thr Asn Thr Ser Pro Ser Trp Gln Arg
145 150 155 160

His Gln His Arg Ile Arg Arg Ala Val Cys Ala Gly Val Trp Val Leu
165 170 175

Ser Ala Ile Ile Pro Leu Pro Glu Val Val His Ile Gln Leu Leu Asp
180 185 190

Gly Ser Glu Pro Met Cys Leu Phe Leu Ala Pro Phe Glu Thr Tyr Ser
195 200 205

Ala Trp Ala Leu Ala Val Ala Leu Ser Ala Thr Ile Leu Gly Phe Leu
210 215 220

Leu Pro Phe Pro Leu Ile Ala Val Phe Asn Ile Leu Ser Ala Cys Arg
225 230 235 240

Leu Arg Arg Gln Gly Gln Thr Glu Ser Arg Arg His Cys Leu Leu Met

Val Glu Asn Val Leu Val Ile Cys Val Asn Cys Arg Arg Ser Gly Arg
 65 70 75 80
 Val Gly Met Leu Asn Leu Tyr Ile Leu Asn Met Ala Val Ala Asp Leu
 85 90 95
 Gly Ile Ile Leu Ser Leu Pro Val Trp Met Leu Glu Val Met Leu Glu
 100 105 110
 Tyr Thr Trp Leu Trp Gly Ser Phe Ser Cys Arg Phe Ile His Tyr Phe
 115 120 125
 Tyr Leu Ala Asn Met Tyr Ser Ser Ile Phe Phe Leu Thr Cys Leu Ser
 130 135 140
 Ile Asp Arg Tyr Val Thr Leu Thr Asn Thr Ser Pro Ser Trp Gln Arg
 145 150 155 160
 His Gln His Arg Ile Arg Arg Ala Val Cys Ala Gly Val Trp Val Leu
 165 170 175
 Ser Ala Ile Ile Pro Leu Pro Glu Val Val His Ile Gln Leu Leu Asp
 180 185 190
 Gly Ser Glu Pro Met Cys Leu Phe Leu Ala Pro Phe Glu Thr Tyr Ser
 195 200 205
 Ala Trp Ala Leu Ala Val Ala Leu Ser Ala Thr Ile Leu Gly Phe Leu
 210 215 220
 Leu Pro Phe Pro Leu Ile Ala Val Phe Asn Ile Leu Ser Ala Cys Arg
 225 230 235 240
 Leu Arg Arg Gln Gly Gln Thr Glu Ser Arg Arg His Cys Leu Leu Met
 245 250 255
 Trp Ala Tyr Ile Val Val Phe Val Ile Cys Trp Leu Pro Tyr His Val
 260 265 270
 Thr Met Leu Leu Leu Thr Leu His Thr Thr His Ile Phe Leu His Cys
 275 280 285
 Asn Leu Val Asn Phe Leu Tyr Phe Phe Tyr Glu Ile Ile Asp Cys Phe
 290 295 300
 Ser Met Leu His Cys Val Ala Asn Pro Ile Leu Tyr Asn Phe Leu Ser
 305 310 315 320

Pro Ser Phe Arg Gly Arg Leu Leu Ser Leu Val Val Arg Tyr Leu Pro
325 330 335

Lys Glu Gln Ala Arg Ala Ala Gly Gly Arg Ala Ser Ser Ser Ser Ser
340 345 350

Thr Gln His Ser Ile Ile Ile Thr Lys Glu Gly Ser Leu Pro Leu Gln
355 360 365

Arg Ile Cys Thr Pro Thr Pro Ser Glu Thr Cys Arg Pro Pro Leu Cys
370 375 380

Leu Arg Thr Pro His Leu His Ser Ala Ile Pro
385 390 395

<210> 309

<211> 75

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: 7tm_1: domain
sequence

<400> 309

Gly Asn Leu Leu Val Ile Leu Val Ile Leu Arg Thr Lys Lys Leu Arg
1 5 10 15

Thr Pro Thr Asn Ile Phe Ile Leu Asn Leu Ala Val Ala Asp Leu Leu
20 25 30

Phe Leu Leu Thr Leu Pro Pro Trp Ala Leu Tyr Tyr Leu Val Gly Gly
35 40 45

Ser Glu Asp Trp Pro Phe Gly Ser Ala Leu Cys Lys Leu Val Thr Ala
50 55 60

Leu Asp Val Val Asn Met Tyr Ala Ser Ile Leu
65 70 75

<210> 310

<211> 73

<212> PRT

<213> Homo sapiens

<400> 310

Glu Asn Leu Leu Val Ile Cys Val Asn Trp Arg Gly Ser Gly Arg Ala
 1 5 10 15
 Gly Leu Met Asn Leu Tyr Ile Leu Asn Met Ala Ile Ala Asp Leu Gly
 20 25 30
 Ile Val Leu Ser Leu Pro Val Trp Met Leu Glu Val Thr Leu Asp Tyr
 35 40 45
 Thr Trp Leu Trp Gly Ser Phe Ser Cys Arg Phe Thr His Tyr Phe Tyr
 50 55 60
 Phe Val Asn Met Tyr Ser Ser Ile Phe
 65 70

<210> 311
 <211> 87
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: 7tm_1: domain
 sequence

<400> 311
 Phe Leu Leu Pro Leu Leu Val Ile Leu Val Cys Tyr Thr Arg Ile Leu
 1 5 10 15
 Arg Thr Leu Arg Lys Ala Ala Lys Thr Leu Leu Val Val Val Val Val
 20 25 30
 Phe Val Leu Cys Trp Leu Pro Tyr Phe Ile Val Leu Leu Leu Asp Thr
 35 40 45
 Leu Cys Leu Ser Ile Ile Met Ser Ser Thr Cys Glu Leu Glu Arg Val
 50 55 60
 Leu Pro Thr Ala Leu Leu Val Thr Leu Trp Leu Ala Tyr Val Asn Ser
 65 70 75 80
 Cys Leu Asn Pro Ile Ile Tyr
 85

<210> 312
 <211> 94
 <212> PRT

<213> Homo sapiens

<400> 312

Phe Leu Leu Pro Phe Pro Leu Ile Thr Val Phe Asn Val Leu Thr Ala
1 5 10 15
Cys Arg Leu Arg Gln Pro Gly Gln Pro Lys Ser Arg Arg His Cys Leu
20 25 30
Leu Leu Cys Ala Tyr Val Ala Val Phe Val Met Cys Trp Leu Pro Tyr
35 40 45
His Val Thr Leu Leu Leu Leu Thr Leu His Gly Thr His Ile Ser Leu
50 55 60
His Cys His Leu Val His Leu Leu Tyr Phe Phe Tyr Asp Val Ile Asp
65 70 75 80
Cys Phe Ser Met Leu His Cys Val Ile Asn Pro Ile Leu Tyr
85 90

<210> 313

<211> 254

<212> PRT

<213> Homo sapiens

<400> 313

Gly Asn Leu Leu Val Ile Leu Val Ile Leu Arg Thr Lys Lys Leu Arg
1 5 10 15
Thr Pro Thr Asn Ile Phe Leu Leu Asn Leu Ala Val Ala Asp Leu Leu
20 25 30
Phe Leu Leu Thr Leu Pro Pro Trp Ala Leu Tyr Tyr Leu Val Gly Gly
35 40 45
Asp Trp Val Phe Gly Asp Ala Leu Cys Lys Leu Val Gly Ala Leu Phe
50 55 60
Val Val Asn Gly Tyr Ala Ser Ile Leu Leu Leu Thr Ala Ile Ser Ile
65 70 75 80
Asp Arg Tyr Leu Ala Ile Val His Pro Leu Arg Tyr Arg Arg Ile Arg
85 90 95
Thr Pro Arg Arg Ala Lys Val Leu Ile Leu Leu Val Trp Val Leu Ala
100 105 110

Leu Leu Leu Ser Leu Pro Pro Leu Leu Phe Ser Trp Leu Arg Thr Val
 115 120 125
 Glu Glu Gly Asn Thr Thr Val Cys Leu Ile Asp Phe Pro Glu Glu Ser
 130 135 140
 Val Lys Arg Ser Tyr Val Leu Leu Ser Thr Leu Val Gly Phe Val Leu
 145 150 155 160
 Pro Leu Leu Val Ile Leu Val Cys Tyr Thr Arg Ile Leu Arg Thr Leu
 165 170 175
 Arg Lys Arg Ala Arg Ser Gln Arg Ser Leu Lys Arg Arg Ser Ser Ser
 180 185 190
 Glu Arg Lys Ala Ala Lys Met Leu Leu Val Val Val Val Val Phe Val
 195 200 205
 Leu Cys Trp Leu Pro Tyr His Ile Val Leu Leu Leu Asp Ser Leu Cys
 210 215 220
 Leu Leu Ser Ile Trp Arg Val Leu Pro Thr Ala Leu Leu Ile Thr Leu
 225 230 235 240
 Trp Leu Ala Tyr Val Asn Ser Cys Leu Asn Pro Ile Ile Tyr
 245 250

<210> 314

<211> 254

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: 7tm_1: domain
sequence

<400> 314

Gly Asn Leu Leu Val Ile Leu Val Ile Leu Arg Thr Lys Lys Leu Arg
 1 5 10 15
 Thr Pro Thr Asn Ile Phe Leu Leu Asn Leu Ala Val Ala Asp Leu Leu
 20 25 30
 Phe Leu Leu Thr Leu Pro Pro Trp Ala Leu Tyr Tyr Leu Val Gly Gly
 35 40 45

Asp Trp Val Phe Gly Asp Ala Leu Cys Lys Leu Val Gly Ala Leu Phe
 50 55 60
 Val Val Asn Gly Tyr Ala Ser Ile Leu Leu Leu Thr Ala Ile Ser Ile
 65 70 75 80
 Asp Arg Tyr Leu Ala Ile Val His Pro Leu Arg Tyr Arg Arg Ile Arg
 85 90 95
 Thr Pro Arg Arg Ala Lys Val Leu Ile Leu Leu Val Trp Val Leu Ala
 100 105 110
 Leu Leu Leu Ser Leu Pro Pro Leu Leu Phe Ser Trp Leu Arg Thr Val
 115 120 125
 Glu Glu Gly Asn Thr Thr Val Cys Leu Ile Asp Phe Pro Glu Glu Ser
 130 135 140
 Val Lys Arg Ser Tyr Val Leu Leu Ser Thr Leu Val Gly Phe Val Leu
 145 150 155 160
 Pro Leu Leu Val Ile Leu Val Cys Tyr Thr Arg Ile Leu Arg Thr Leu
 165 170 175
 Arg Lys Arg Ala Arg Ser Gln Arg Ser Leu Lys Arg Arg Ser Ser Ser
 180 185 190
 Glu Arg Lys Ala Ala Lys Met Leu Leu Val Val Val Val Val Phe Val
 195 200 205
 Leu Cys Trp Leu Pro Tyr His Ile Val Leu Leu Leu Asp Ser Leu Cys
 210 215 220
 Leu Leu Ser Ile Trp Arg Val Leu Pro Thr Ala Leu Leu Ile Thr Leu
 225 230 235 240
 Trp Leu Ala Tyr Val Asn Ser Cys Leu Asn Pro Ile Ile Tyr
 245 250

<210> 315

<211> 173

<212> PRT

<213> Homo sapiens

<400> 315

Met Ala Arg Met Asn Arg Pro Ala Pro Val Glu Val Thr Tyr Lys Asn
 1 5 10 15

Met Arg Phe Leu Ile Thr His Asn Pro Thr Asn Ala Thr Leu Asn Lys
 20 25 30
 Phe Ile Glu Glu Leu Lys Lys Tyr Gly Val Thr Thr Ile Val Arg Val
 35 40 45
 Cys Glu Ala Thr Tyr Asp Thr Thr Leu Val Glu Lys Glu Gly Ile His
 50 55 60
 Val Leu Asp Trp Pro Phe Asp Asp Gly Ala Pro Pro Ser Asn Gln Ile
 65 70 75 80
 Val Asp Asp Trp Leu Ser Leu Val Lys Ile Lys Phe Arg Glu Glu Pro
 85 90 95
 Gly Cys Cys Ile Ala Val His Cys Val Ala Gly Leu Gly Arg Ala Pro
 100 105 110
 Val Leu Val Ala Leu Ala Leu Ile Glu Gly Gly Met Lys Tyr Glu Asp
 115 120 125
 Ala Val Gln Phe Ile Arg Gln Lys Arg Arg Gly Ala Phe Asn Ser Lys
 130 135 140
 Gln Leu Leu Tyr Leu Glu Lys Tyr Arg Pro Lys Met Arg Leu Arg Phe
 145 150 155 160
 Lys Asp Ser Asn Gly His Arg Asn Asn Cys Cys Ile Gln
 165 170

<210> 316

<211> 173

<212> PRT

<213> Rattus norvegicus

<400> 316

Met Ala Arg Met Asn Arg Pro Ala Pro Val Glu Val Thr Tyr Lys Asn
 1 5 10 15
 Met Arg Phe Leu Ile Thr His Asn Pro Thr Asn Ala Thr Leu Asn Lys
 20 25 30
 Phe Ile Glu Glu Leu Lys Lys Tyr Gly Val Thr Thr Ile Val Arg Val
 35 40 45
 Cys Glu Ala Thr Tyr Asp Thr Thr Leu Val Glu Lys Glu Gly Ile His

Val Ala Val His Cys Val Ala Gly Leu Gly Arg Ala Pro Val Leu Val
100 105 110

Ala Leu Ala Leu Ile Glu Cys Gly Met Lys Tyr Glu Asp Ala Val Gln
115 120 125

Phe Ile Arg Gln Lys Arg Arg Gly Ala Phe Asn Ser Lys Gln Leu Leu
130 135 140

Tyr Leu Glu Lys Tyr Arg Pro Lys Met Arg Leu Arg Phe Arg Asp Thr
145 150 155 160

Asn Gly His Cys Cys Val Gln
165

<210> 318

<211> 167

<212> PRT

<213> Homo sapiens

<400> 318

Met Asn Arg Pro Ala Pro Val Glu Ile Ser Tyr Glu Asp Met Arg Phe
1 5 10 15

Leu Ile Thr His Asn Pro Thr Asn Ala Thr Leu Asn Lys Phe Thr Glu
20 25 30

Glu Leu Lys Lys Tyr Gly Val Thr Thr Leu Val Arg Val Cys Asp Ala
35 40 45

Thr Tyr Asp Lys Ala Pro Val Glu Lys Glu Gly Ile His Val Leu Asp
50 55 60

Trp Pro Phe Asp Asp Gly Ala Pro Pro Pro Asn Gln Ile Val Asp Asp
65 70 75 80

Trp Leu Asn Leu Leu Lys Thr Lys Phe Arg Glu Glu Pro Gly Cys Cys
85 90 95

Val Ala Val His Cys Val Ala Gly Leu Gly Arg Ala Pro Val Leu Val
100 105 110

Ala Leu Ala Leu Ile Glu Cys Gly Met Lys Tyr Glu Asp Ala Val Gln
115 120 125

Phe Ile Arg Gln Lys Arg Arg Gly Ala Phe Asn Ser Lys Gln Leu Leu
130 135 140

Tyr Leu Glu Lys Tyr Arg Pro Lys Met Arg Leu Arg Phe Arg Asp Thr
 145 150 155 160

Asn Gly His Cys Cys Val Gln
 165

<210> 319

<211> 167

<212> PRT

<213> Mus musculus

<400> 319

Met Asn Arg Pro Ala Pro Val Glu Ile Ser Tyr Glu Asn Met Arg Phe
 1 5 10 15

Leu Ile Thr His Asn Pro Thr Asn Ala Thr Leu Asn Lys Phe Thr Glu
 20 25 30

Glu Leu Lys Lys Tyr Gly Val Thr Thr Leu Val Arg Val Cys Asp Ala
 35 40 45

Thr Tyr Asp Lys Ala Pro Val Glu Lys Glu Gly Ile His Val Leu Asp
 50 55 60

Trp Pro Phe Asp Asp Gly Ala Pro Pro Pro Asn Gln Ile Val Asp Asp
 65 70 75 80

Trp Leu Asn Leu Leu Lys Thr Leu Phe Arg Glu Glu Pro Gly Cys Cys
 85 90 95

Val Ala Val His Cys Val Ala Gly Ile Gly Arg Ala Pro Val Leu Val
 100 105 110

Ala Leu Ala Leu Ile Glu Cys Gly Met Lys Tyr Glu Asp Ala Val Gln
 115 120 125

Phe Ile Arg Gln Lys Arg Arg Gly Ala Phe Asn Ser Lys Gln Leu Leu
 130 135 140

Tyr Leu Glu Lys Tyr Arg Pro Lys Met Arg Leu Arg Phe Arg Asp Thr
 145 150 155 160

Asn Gly His Cys Cys Val Gln
 165

<210> 320
 <211> 130
 <212> PRT
 <213> Homo sapiens

<400> 320
 Pro Ile Thr His Asn Pro Thr Asn Val Thr Leu Asn Lys Phe Ile Glu
 1 5 10 15
 Glu Leu Lys Lys Tyr Gly Ala Thr Thr Ile Val Arg Val Cys Glu Ala
 20 25 30
 Thr Tyr Asp Thr Thr Leu Val Glu Lys Glu Gly Ile His Val Leu Asn
 35 40 45
 Trp Pro Phe Gly Asp Gly Ala Pro Pro Ser Asn Gln Ile Val Ala Asp
 50 55 60
 Trp Leu His Phe Val Lys Ile Lys Phe Cys Glu Glu Pro Gly Cys Tyr
 65 70 75 80
 Ile Ala Val Asn Cys Ile Val Gly Leu Gly Lys Ala Pro Val Leu Val
 85 90 95
 Ala Leu Ala Ser Val Glu Gly Gly Met Lys His Glu Asp Ala Val Gln
 100 105 110
 Phe Ile Gly Gln Lys Arg Ser Gly Ala Phe Lys Ser Lys Gln Leu Leu
 115 120 125
 Tyr Leu
 130

<210> 321
 <211> 134
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Y_phosphatase
 domain sequence

<400> 321
 Ser Leu Thr Tyr Gly Asp Phe Thr Val Thr Cys Val Ser Val Glu Lys
 1 5 10 15
 Lys Lys Asp Asp Tyr Thr Val Arg Thr Leu Glu Leu Thr Asn Ser Gly

20 25 30
 Asp Asp Glu Thr Arg Thr Val Lys His Tyr His Tyr Thr Gly Trp Pro
 35 40 45
 Asp His Gly Val Pro Glu Ser Pro Lys Ser Ile Leu Asp Leu Leu Arg
 50 55 60
 Lys Val Arg Lys Ser Lys Gly Thr Pro Asp Asp Gly Pro Ile Val Val
 65 70 75 80
 His Cys Ser Ala Gly Ile Gly Arg Thr Gly Thr Phe Ile Ala Ile Asp
 85 90 95
 Ile Leu Leu Gln Gln Leu Glu Lys Glu Gly Val Val Asp Val Phe Asp
 100 105 110
 Thr Val Lys Lys Leu Arg Ser Gln Arg Pro Gly Met Val Gln Thr Glu
 115 120 125
 Glu Gln Tyr Ile Phe Ile
 130

 <210> 322
 <211> 90
 <212> PRT
 <213> Homo sapiens

 <400> 322
 His Val Leu Asn Trp Pro Phe Gly Asp Gly Ala Pro Pro Ser Asn Gln
 1 5 10 15
 Ile Val Ala Asp Trp Leu His Phe Val Lys Ile Lys Phe Cys Glu Glu
 20 25 30
 Pro Gly Cys Tyr Ile Ala Val Asn Cys Ile Val Gly Leu Gly Lys Ala
 35 40 45
 Pro Val Leu Val Ala Leu Ala Ser Val Glu Gly Gly Met Lys His Glu
 50 55 60
 Asp Ala Val Gln Phe Ile Gly Gln Lys Arg Ser Gly Ala Phe Lys Ser
 65 70 75 80
 Lys Gln Leu Leu Tyr Leu Glu Lys Tyr His
 85 90

<210> 323
<211> 98
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PTPc_motif

<400> 323
His Tyr Thr Gly Trp Pro Asp His Gly Val Pro Glu Ser Pro Asp Ser
1 5 10 15
Ile Leu Glu Phe Leu Arg Ala Val Lys Lys Ser Leu Asn Lys Ser Ala
20 25 30
Asn Asn Gly Pro Val Val Val His Cys Ser Ala Gly Val Gly Arg Thr
35 40 45
Gly Thr Phe Val Ala Ile Asp Ile Leu Leu Gln Gln Leu Glu Ala Gly
50 55 60
Thr Gly Glu Val Asp Ile Phe Asp Ile Val Lys Glu Leu Arg Ser Gln
65 70 75 80
Arg Pro Gly Ala Val Gln Thr Leu Glu Gln Tyr Leu Phe Leu Tyr Arg
85 90 95
Ala Leu

<210> 324
<211> 355
<212> PRT
<213> Homo sapiens

<400> 324
Met Ser Arg Gln Leu Ser Arg Ala Arg Pro Ala Thr Val Leu Gly Ala
1 5 10 15
Met Glu Met Gly Arg Arg Met Asp Ala Pro Thr Ser Ala Ala Val Thr
20 25 30
Arg Ala Phe Leu Glu Arg Gly His Thr Glu Ile Asp Thr Ala Phe Val
35 40 45
Tyr Ser Glu Gly Gln Ser Glu Thr Ile Leu Gly Gly Leu Gly Leu Arg

Gly Trp Ile Leu Pro Thr Val Tyr Gln Gly Met Tyr Asn Ala Ile Thr
 165 170 175
 Arg Gln Val Glu Thr Glu Leu Phe Pro Cys Leu Arg His Phe Gly Leu
 180 185 190
 Arg Phe Tyr Ala Phe Asn Pro Leu Ala Gly Gly Leu Leu Thr Gly Lys
 195 200 205
 Tyr Lys Tyr Glu Asp Lys Asp Gly Lys Gln Pro Val Gly Arg Phe Phe
 210 215 220
 Gly Asn Thr Trp Ala Glu Met Tyr Arg Asn Arg Tyr Trp Lys Glu His
 225 230 235 240
 His Phe Glu Gly Ile Ala Leu Val Glu Lys Ala Leu Gln Ala Ala Tyr
 245 250 255
 Gly Ala Ser Ala Pro Ser Met Thr Ser Ala Thr Leu Arg Trp Met Tyr
 260 265 270
 His His Ser Gln Leu Gln Gly Ala His Gly Asp Ala Val Ile Leu Gly
 275 280 285
 Met Ser Ser Leu Glu Gln Leu Glu Gln Asn Leu Ala Ala Ala Glu Glu
 290 295 300
 Gly Pro Leu Glu Pro Ala Val Val Asp Ala Phe Asn Gln Ala Trp His
 305 310 315 320
 Leu Val Ala His Glu Cys Pro Asn Tyr Phe Arg
 325 330

<210> 326

<211> 331

<212> PRT

<213> Homo sapiens

<400> 326

Met Ser Arg Gln Leu Ser Arg Ala Arg Pro Ala Thr Val Leu Gly Ala
 1 5 10 15

Met Glu Met Gly Arg Arg Met Asp Ala Pro Thr Ser Ala Ala Val Thr
 20 25 30

Arg Ala Phe Leu Glu Arg Gly His Thr Glu Ile Asp Thr Ala Phe Val
 35 40 45

Tyr Ser Glu Gly Gln Ser Glu Thr Ile Leu Gly Gly Leu Gly Leu Arg
50 55 60
Leu Gly Gly Ser Asp Cys Arg Val Lys Ile Asp Thr Lys Ala Ile Pro
65 70 75 80
Leu Phe Gly Asn Ser Leu Lys Pro Asp Ser Leu Arg Phe Gln Leu Glu
85 90 95
Thr Ser Leu Lys Arg Leu Gln Cys Pro Arg Val Asp Leu Phe Tyr Leu
100 105 110
His Met Pro Asp His Ser Thr Pro Val Glu Glu Thr Leu Arg Ala Cys
115 120 125
His Gln Leu His Gln Glu Gly Lys Phe Val Glu Leu Gly Leu Ser Asn
130 135 140
Tyr Ala Ala Trp Glu Val Ala Glu Ile Cys Thr Leu Cys Lys Ser Asn
145 150 155 160
Gly Trp Ile Leu Pro Thr Val Tyr Gln Gly Met Tyr Asn Ala Ile Thr
165 170 175
Arg Gln Val Glu Thr Glu Leu Phe Pro Cys Leu Arg His Phe Gly Leu
180 185 190
Arg Phe Tyr Ala Phe Asn Pro Leu Ala Gly Gly Leu Leu Thr Gly Lys
195 200 205
Tyr Lys Tyr Glu Asp Lys Asn Gly Lys Gln Pro Val Gly Arg Phe Phe
210 215 220
Gly Asn Thr Trp Ala Glu Met Tyr Arg Asn Arg Tyr Trp Lys Glu His
225 230 235 240
His Phe Glu Gly Ile Ala Leu Val Glu Lys Ala Leu Gln Ala Ala Tyr
245 250 255
Gly Ala Ser Ala Pro Ser Met Thr Ser Ala Thr Leu Arg Trp Met Tyr
260 265 270
His His Ser Gln Leu Gln Gly Ala His Gly Asp Ala Val Ile Leu Gly
275 280 285
Met Ser Ser Leu Glu Gln Leu Glu Gln Asn Leu Ala Ala Ala Glu Glu
290 295 300

Gly Pro Leu Glu Pro Ala Val Val Asp Ala Phe Asn Gln Ala Trp His
 305 310 315 320

Leu Val Thr His Glu Cys Pro Asn Tyr Phe Arg
 325 330

<210> 327

<211> 331

<212> PRT

<213> Homo sapiens

<400> 327

Met Ser Arg Gln Leu Ser Arg Ala Arg Pro Ala Thr Val Leu Gly Ala
 1 5 10 15

Met Glu Met Gly Arg Arg Met Asp Ala Pro Thr Ser Ala Ala Val Thr
 20 25 30

Arg Ala Phe Leu Glu Arg Gly His Thr Glu Ile Asp Thr Ala Phe Val
 35 40 45

Tyr Ser Glu Gly Gln Ser Glu Thr Ile Leu Gly Gly Leu Gly Leu Arg
 50 55 60

Leu Gly Gly Ser Asp Cys Arg Val Lys Ile Asp Thr Lys Ala Ile Pro
 65 70 75 80

Leu Phe Gly Asn Ser Leu Lys Pro Asp Ser Leu Arg Phe Gln Leu Glu
 85 90 95

Thr Ser Leu Lys Arg Leu Gln Cys Pro Arg Val Asp Leu Phe Tyr Leu
 100 105 110

His Met Pro Asp His Ser Thr Pro Val Glu Glu Thr Leu Arg Ala Cys
 115 120 125

His Gln Leu His Gln Glu Gly Lys Phe Val Glu Leu Gly Leu Ser Asn
 130 135 140

Tyr Ala Ala Trp Glu Val Ala Glu Ile Cys Thr Leu Cys Lys Ser Asn
 145 150 155 160

Gly Trp Ile Leu Pro Thr Val Tyr Gln Gly Met Tyr Asn Ala Ile Thr
 165 170 175

Arg Gln Val Glu Thr Glu Leu Phe Pro Cys Leu Arg His Phe Gly Leu

180 185 190
 Arg Phe Tyr Ala Phe Asn Pro Leu Ala Gly Gly Leu Leu Thr Gly Lys
 195 200 205
 Tyr Lys Tyr Glu Asp Lys Asn Gly Lys Gln Pro Val Gly Arg Phe Phe
 210 215 220
 Gly Asn Thr Trp Ala Glu Met Tyr Arg Asn Arg Tyr Trp Lys Glu His
 225 230 235 240
 His Phe Glu Gly Ile Ala Leu Val Glu Lys Ala Leu Gln Ala Ala Tyr
 245 250 255
 Gly Ala Ser Ala Pro Ser Met Thr Ser Ala Thr Leu Arg Trp Met Tyr
 260 265 270
 His His Ser Gln Leu Gln Gly Ala His Gly Asp Ala Val Ile Leu Gly
 275 280 285
 Met Ser Ser Leu Glu Gln Leu Glu Gln Asn Leu Ala Ala Ala Glu Glu
 290 295 300
 Gly Pro Leu Glu Pro Ala Val Val Asp Ala Phe Asn Gln Ala Trp His
 305 310 315 320
 Leu Val Thr His Glu Cys Pro Asn Tyr Phe Arg
 325 330

 <210> 328
 <211> 330
 <212> PRT
 <213> Homo sapiens

 <400> 328
 Met Ser Arg Pro Pro Pro Pro Arg Val Ala Ser Val Leu Gly Thr Met
 1 5 10 15
 Glu Met Gly Arg Arg Met Asp Ala Pro Ala Ser Ala Ala Val Arg
 20 25 30
 Ala Phe Leu Glu Arg Gly His Thr Glu Leu Asp Thr Ala Phe Met Tyr
 35 40 45
 Ser Asp Gly Gln Ser Glu Thr Ile Leu Gly Gly Leu Gly Leu Gly Leu
 50 55 60

Gly Gly Gly Asp Cys Arg Val Lys Ile Ala Thr Lys Ala Asn Pro Trp
 65 70 75 80
 Asp Gly Lys Ser Leu Lys Pro Asp Ser Val Arg Ser Gln Leu Glu Thr
 85 90 95
 Ser Leu Lys Arg Leu Gln Cys Pro Gln Val Asp Leu Phe Tyr Leu His
 100 105 110
 Thr Pro Asp His Gly Thr Pro Val Glu Glu Thr Leu His Ala Cys Gln
 115 120 125
 Arg Leu His Gln Glu Gly Lys Phe Val Glu Leu Gly Leu Ser Asn Tyr
 130 135 140
 Ala Ser Trp Glu Val Ala Glu Ile Cys Thr Leu Cys Lys Ser Asn Gly
 145 150 155 160
 Trp Ile Leu Pro Thr Val Tyr Gln Gly Met Tyr Asn Ala Thr Thr Arg
 165 170 175
 Gln Val Glu Thr Glu Leu Phe Pro Cys Leu Arg His Phe Gly Leu Arg
 180 185 190
 Phe Tyr Ala Tyr Asn Pro Leu Ala Gly Gly Leu Leu Thr Gly Lys Tyr
 195 200 205
 Lys Tyr Glu Asp Lys Asp Gly Lys Gln Pro Val Gly Arg Phe Phe Gly
 210 215 220
 Asn Ser Trp Ala Glu Thr Tyr Arg Asn Arg Phe Trp Lys Glu His His
 225 230 235 240
 Phe Glu Ala Ile Ala Leu Val Glu Lys Ala Leu Gln Ala Ala Tyr Gly
 245 250 255
 Ala Ser Ala Pro Ser Val Thr Ser Ala Ala Leu Arg Trp Met Tyr His
 260 265 270
 His Ser Gln Leu Gln Gly Ala His Gly Asp Ala Val Ile Leu Gly Met
 275 280 285
 Ser Ser Leu Glu Gln Leu Glu Gln Asn Leu Ala Ala Thr Glu Glu Gly
 290 295 300
 Pro Leu Glu Pro Ala Val Val Asp Ala Phe Asn Gln Ala Trp His Leu
 305 310 315 320

Val Ala His Glu Cys Pro Asn Tyr Phe Arg
325 330

<210> 329

<211> 306

<212> PRT

<213> Homo sapiens

<400> 329

Pro Ala Thr Val Leu Gly Ala Met Glu Met Gly Arg Arg Met Asp Ala
1 5 10 15

Pro Thr Ser Ala Ala Val Thr Arg Ala Phe Leu Glu Arg Gly His Thr
20 25 30

Glu Ile Asp Thr Ala Phe Leu Tyr Ser Asp Gly Gln Ser Glu Thr Ile
35 40 45

Leu Gly Gly Leu Gly Leu Arg Met Gly Ser Ser Asp Cys Arg Val Lys
50 55 60

Ile Ala Thr Lys Ala Asn Pro Trp Ile Gly Asn Ser Leu Lys Pro Asp
65 70 75 80

Ser Val Arg Ser Gln Leu Glu Thr Ser Leu Lys Arg Leu Gln Cys Pro
85 90 95

Arg Val Asp Leu Phe Tyr Leu His Ala Pro Asp His Ser Ala Pro Val
100 105 110

Glu Glu Thr Leu Arg Ala Cys His Gln Leu His Gln Glu Gly Lys Phe
115 120 125

Val Glu Leu Gly Leu Ser Asn Tyr Ala Ala Trp Glu Val Ala Glu Ile
130 135 140

Cys Thr Leu Cys Lys Ser Asn Gly Trp Ile Leu Pro Thr Val Tyr Gln
145 150 155 160

Gly Met Tyr Ser Ala Thr Thr Arg Gln Val Glu Thr Glu Leu Phe Pro
165 170 175

Cys Leu Arg His Phe Gly Leu Arg Phe Tyr Ala Tyr Asn Pro Leu Ala
180 185 190

Asp Gln Ser Pro Glu Gly Cys Gly Ser Phe Trp Gly Thr Leu Gly Pro
195 200 205

Gly Ala Asp Cys Cys Leu Pro Ala Gly Gly Leu Leu Thr Gly Lys Tyr
 210 215 220
 Lys Tyr Glu Asp Lys Asp Gly Lys Gln Pro Val Gly Arg Phe Phe Gly
 225 230 235 240
 Thr Gln Trp Ala Glu Ile Tyr Arg Asn Gln Phe Trp Lys Glu His His
 245 250 255
 Phe Glu Gly Ile Ala Leu Val Glu Lys Ala Leu Gln Ala Ala Tyr Gly
 260 265 270
 Ala Ser Ala Pro Ser Met Thr Ser Ala Ala Leu Arg Trp Met Tyr His
 275 280 285
 His Ser Gln Leu Gln Gly Ala His Gly Asp Ala Val Ile Leu Gly Met
 290 295 300
 Ser Ser
 305

<210> 330

<211> 245

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Aldo/keto
 reductase family domain sequence

<400> 330

Pro Leu Leu Gly Leu Gly Thr Trp Lys Thr Pro Gly Arg Val Asp Asp
 1 5 10 15
 Glu Glu Ala Phe Glu Ala Val Lys Ala Ala Leu Asp Ala Gly Tyr Arg
 20 25 30
 His Phe Asp Thr Ala Glu Ile Tyr Gly Asn Glu Glu Glu Val Gly Glu
 35 40 45
 Ala Ile Lys Glu Ala Leu Phe Glu Gly Ser Gly Val Val Arg Glu Asp
 50 55 60
 Ile Phe Ile Thr Ser Lys Leu Trp Asn Thr Phe His Ser Pro Lys His
 65 70 75 80

Val Arg Glu Ala Leu Glu Lys Ser Leu Lys Arg Leu Gly Leu Asp Tyr
 85 90 95
 Val Asp Leu Tyr Leu Ile His Trp Pro Asp Pro Leu Lys Pro Gly Asp
 100 105 110
 Asp Val Pro Ile Glu Glu Thr Trp Lys Ala Leu Glu Lys Leu Val Asp
 115 120 125
 Glu Gly Lys Val Arg Ser Ile Gly Val Ser Asn Phe Ser Ala Glu Gln
 130 135 140
 Leu Glu Glu Ala Leu Ser Glu Ala Gly Lys Ile Pro Pro Val Val Asn
 145 150 155 160
 Gln Val Glu Tyr His Pro Tyr Leu Arg Gln Asp Glu Leu Arg Lys Phe
 165 170 175
 Cys Lys Lys His Gly Ile Gly Val Thr Ala Tyr Ser Pro Leu Gly Ser
 180 185 190
 Gly Leu Leu Asp Lys Phe Trp Ser Glu Leu Gly Ser Pro Glu Leu Leu
 195 200 205
 Glu Asp Pro Ala Leu Lys Lys Ile Ala Glu Lys Tyr Gly Lys Thr Pro
 210 215 220
 Ala Gln Val Ala Leu Arg Trp Val Leu Gln Arg Gly Val Ser Val Ile
 225 230 235 240
 Pro Lys Ser Ser Thr
 245

<210> 331

<211> 768

<212> PRT

<213> Mus musculus

<220>

<221> VARIANT

<222> (761)

<223> Where Xaa is any amino acid

<400> 331

Met Lys Leu Leu Trp Gln Ala Lys Met Ser Ser Ile Gln Asp Trp Gly
 1 5 10 15

Glu Glu Val Glu Glu Gly Ala Val Tyr His Val Thr Leu Lys Arg Val
 20 25 30
 Gln Ile Gln Gln Ala Ala Asn Lys Gly Ala Arg Trp Leu Gly Val Glu
 35 40 45
 Gly Asp Gln Leu Pro Pro Gly His Thr Val Ser Gln Tyr Glu Thr Cys
 50 55 60
 Lys Ile Arg Thr Ile Lys Ala Gly Thr Leu Glu Lys Leu Val Glu Asn
 65 70 75 80
 Leu Leu Thr Ala Phe Gly Asp Asn Asp Phe Thr Tyr Ile Ser Ile Phe
 85 90 95
 Leu Ser Thr Tyr Arg Gly Phe Ala Ser Thr Lys Glu Val Leu Glu Leu
 100 105 110
 Leu Leu Asp Arg Tyr Gly Asn Leu Thr Ser Pro Asn Cys Glu Glu Asp
 115 120 125
 Gly Ser Gln Ser Ser Ser Glu Ser Lys Met Val Ile Arg Asn Ala Ile
 130 135 140
 Ala Ser Ile Leu Arg Ala Trp Leu Asp Gln Cys Ala Glu Asp Phe Arg
 145 150 155 160
 Glu Pro Pro His Phe Pro Cys Leu Gln Lys Leu Leu Asp Tyr Leu Thr
 165 170 175
 Arg Met Met Pro Gly Ser Asp Pro Glu Arg Arg Ala Gln Asn Leu Leu
 180 185 190
 Glu Gln Phe Gln Lys Gln Glu Val Glu Thr Asp Asn Gly Leu Pro Asn
 195 200 205
 Thr Ile Ser Phe Ser Leu Glu Glu Glu Glu Glu Leu Glu Gly Gly Glu
 210 215 220
 Ser Ala Glu Phe Thr Cys Phe Ser Glu Asp Leu Val Ala Glu Gln Leu
 225 230 235 240
 Thr Tyr Met Asp Ala Gln Leu Phe Lys Lys Val Val Pro His His Cys
 245 250 255
 Leu Gly Cys Ile Trp Ser Arg Arg Asp Lys Lys Glu Asn Lys His Leu
 260 265 270

Ala	Pro	Thr	Ile	Arg	Ala	Thr	Ile	Ser	Gln	Phe	Asn	Thr	Leu	Thr	Lys	275	280	285	
Cys	Val	Val	Ser	Thr	Ile	Leu	Gly	Gly	Lys	Glu	Leu	Lys	Thr	Gln	Gln	290	295	300	
Arg	Ala	Lys	Ile	Ile	Glu	Lys	Trp	Ile	Asn	Ile	Ala	His	Glu	Cys	Arg	305	310	315	320
Leu	Leu	Lys	Asn	Phe	Ser	Ser	Leu	Arg	Ala	Ile	Val	Ser	Ala	Leu	Gln	325	330	335	
Ser	Asn	Ser	Ile	Tyr	Arg	Leu	Lys	Lys	Thr	Trp	Ala	Ala	Val	Pro	Arg	340	345	350	
Asp	Arg	Met	Leu	Met	Phe	Glu	Glu	Leu	Ser	Asp	Ile	Phe	Ser	Asp	His	355	360	365	
Asn	Asn	His	Leu	Thr	Ser	Arg	Glu	Leu	Leu	Met	Lys	Glu	Gly	Thr	Ser	370	375	380	
Lys	Phe	Ala	Asn	Leu	Asp	Ser	Ser	Val	Lys	Glu	Asn	Gln	Lys	Arg	Thr	385	390	395	400
Gln	Arg	Arg	Leu	Gln	Leu	Gln	Lys	Asp	Met	Gly	Val	Met	Gln	Gly	Thr	405	410	415	
Val	Pro	Tyr	Leu	Gly	Thr	Phe	Leu	Thr	Asp	Leu	Thr	Met	Leu	Asp	Thr	420	425	430	
Ala	Leu	Gln	Asp	Tyr	Ile	Glu	Gly	Gly	Leu	Ile	Asn	Phe	Glu	Lys	Arg	435	440	445	
Arg	Arg	Glu	Phe	Glu	Val	Ile	Ala	Gln	Ile	Lys	Leu	Leu	Gln	Ser	Ala	450	455	460	
Cys	Asn	Ser	Tyr	Cys	Met	Thr	Pro	Asp	Gln	Lys	Phe	Ile	Gln	Trp	Phe	465	470	475	480
Gln	Arg	Gln	Gln	Leu	Leu	Thr	Glu	Glu	Glu	Ser	Tyr	Ala	Leu	Ser	Cys	485	490	495	
Glu	Ile	Glu	Ala	Ala	Ala	Asp	Ala	Ser	Thr	Thr	Ser	Pro	Lys	Pro	Arg	500	505	510	
Lys	Ser	Met	Val	Lys	Arg	Leu	Ser	Leu	Leu	Phe	Leu	Gly	Ser	Asp	Met	515	520	525	

Ile	Thr	Ser	Pro	Thr	Pro	Thr	Lys	Glu	Gln	Pro	Lys	Ser	Thr	Ala	Ser	530	535	540	
Gly	Ser	Ser	Gly	Glu	Ser	Met	Asp	Ser	Val	Ser	Val	Ser	Ser	Cys	Glu	545	550	555	560
Ser	Asn	His	Ser	Glu	Ala	Glu	Glu	Gly	Ser	Ile	Thr	Pro	Met	Asp	Thr	565	570	575	
Pro	Asp	Glu	Pro	Gln	Lys	Lys	Leu	Ser	Glu	Ser	Ser	Ser	Ser	Cys	Ser	580	585	590	
Ser	Ile	His	Ser	Met	Asp	Thr	Asn	Ser	Ser	Gly	Met	Ser	Ser	Leu	Ile	595	600	605	
Asn	Pro	Leu	Ser	Ser	Pro	Pro	Ser	Cys	Asn	Asn	Asn	Pro	Lys	Ile	His	610	615	620	
Lys	Arg	Ser	Val	Ser	Val	Thr	Ser	Ile	Thr	Ser	Thr	Val	Leu	Pro	Pro	625	630	635	640
Val	Tyr	Asn	Gln	Gln	Asn	Glu	Asp	Thr	Cys	Ile	Ile	Arg	Ile	Ser	Val	645	650	655	
Glu	Asp	Asn	Asn	Gly	Asn	Met	Tyr	Lys	Ser	Ile	Met	Leu	Thr	Ser	Gln	660	665	670	
Asp	Lys	Thr	Pro	Ala	Val	Ile	Gln	Arg	Ala	Met	Leu	Lys	His	Asn	Leu	675	680	685	
Asp	Ser	Asp	Pro	Ala	Glu	Glu	Tyr	Glu	Leu	Val	Gln	Val	Ile	Ser	Glu	690	695	700	
Asp	Lys	Glu	Leu	Val	Ile	Pro	Asp	Ser	Ala	Asn	Val	Phe	Tyr	Ala	Met	705	710	715	720
Asn	Ser	Gln	Val	Asn	Phe	Asp	Phe	Ile	Leu	Arg	Lys	Lys	Asn	Ser	Met	725	730	735	
Glu	Glu	Gln	Val	Lys	Leu	Arg	Ser	Arg	Thr	Ser	Leu	Thr	Leu	Pro	Arg	740	745	750	
Thr	Ala	Lys	Arg	Gly	Cys	Trp	Ser	Xaa	Arg	His	Ser	Lys	Ile	Thr	Leu	755	760	765	

<210> 332
 <211> 709
 <212> PRT
 <213> Mus musculus

<400> 332
 Met Glu Arg Thr Ala Gly Lys Glu Leu Ala Leu Ala Pro Leu Gln Asp
 1 5 10 15
 Trp Gly Glu Glu Thr Glu Asp Gly Ala Val Tyr Ser Val Ser Leu Arg
 20 25 30
 Arg Gln Arg Ser Gln Arg Ser Thr Pro Glu Arg Ser Gly Glu Gly Gln
 35 40 45
 Thr Pro Ile Pro Ala Thr Asp Thr Phe Leu His Tyr Arg Thr Ser Lys
 50 55 60
 Val Arg Ala Leu Arg Ala Ala Arg Leu Glu Arg Leu Val His Glu Leu
 65 70 75 80
 Val Ser Gly Asp Arg Glu Gln Asp Pro Gly Phe Val Pro Ala Phe Leu
 85 90 95
 Ala Thr His Arg Ala Phe Val Pro Thr Ala Arg Val Leu Gly Phe Leu
 100 105 110
 Leu Pro Pro Pro Pro Pro Pro Pro Pro Pro Ala Gly Val Asp Ser
 115 120 125
 Lys Arg Thr Glu Gly Gln Asp Leu Asn Phe Ser Lys Asn Leu Arg Ala
 130 135 140
 Val Val Ser Val Leu Gly Ser Trp Leu Arg Asn His Pro Gln Asp Phe
 145 150 155 160
 Arg Asp Pro Pro Asp His Gln Asn Leu Gly Asn Val Arg Ile Phe Leu
 165 170 175
 Gly Trp Val Ala Pro Gly Gly Ala Glu Ala Arg Glu Ala Glu Lys Leu
 180 185 190
 Leu Glu Asp Phe Leu Lys Glu Ala Lys Gly Glu Gln Thr Glu Glu Glu
 195 200 205
 Lys Arg Leu Ala Trp Ser Gly Pro Pro Arg Ile Ala Gln Thr Pro Gly
 210 215 220

Ser Glu Phe Ala Glu Asp Cys Val Glu Glu Glu Gly Pro Ser Ser Glu
 225 230 235 240
 Gly Pro Glu Leu Leu Asp Phe Ser Val Asp Asp Val Ala Glu Gln Leu
 245 250 255
 Thr Leu Met Asp Val Glu Leu Phe Leu Arg Val Arg Ser Cys Glu Cys
 260 265 270
 Leu Gly Ser Met Trp Ser Gln Arg Asp Arg Pro Gly Ala Ala Gly Ile
 275 280 285
 Ser Pro Thr Val Arg Ala Thr Val Ala Gln Phe Asn Thr Val Thr Gly
 290 295 300
 Cys Val Leu Gly Ser Val Leu Ala Ala Pro Gly Leu Ala Ala Ser Gln
 305 310 315 320
 Arg Ala Gln Arg Ile Glu Lys Trp Ile Arg Ile Ala Gln Arg Cys Arg
 325 330 335
 Glu Leu Arg Asn Phe Ser Ser Leu Arg Ala Ile Leu Ser Ala Leu Gln
 340 345 350
 Ser Asn Pro Ile Tyr Arg Leu Lys Arg Ser Trp Gly Ala Val Ser Arg
 355 360 365
 Glu Pro Leu Ser Val Phe Arg Lys Leu Ser Gln Ile Phe Ser Asp Glu
 370 375 380
 Asp Asn His Leu Ser Ser Arg Ala Ile Leu Ser Gln Glu Glu Thr Thr
 385 390 395 400
 Glu Asp Asp Asp Cys Pro Ser Gly Ser Leu Pro Ser Lys Leu Pro Pro
 405 410 415
 Gly Pro Val Pro Tyr Leu Gly Thr Phe Leu Thr Asp Leu Val Met Leu
 420 425 430
 Asp Thr Ala Leu Pro Asp Thr Leu Lys Gly Asn Leu Ile Asn Phe Glu
 435 440 445
 Lys Arg Arg Lys Glu Trp Glu Ile Leu Ala Arg Ile Gln Gln Leu Gln
 450 455 460
 Gln Arg Cys Gln Arg Tyr Ser Leu Ser Pro Arg Pro Pro Ile Leu Ala
 465 470 475 480

Ala Leu Arg Ala Gln Arg Gln Leu Ser Glu Glu Gln Ser Tyr Arg Val
 485 490 495
 Ser Arg Val Ile Glu Pro Pro Ala Ala Ser Cys Pro Ser Ser Pro Arg
 500 505 510
 Ile Arg Arg Arg Ile Ser Leu Thr Lys Arg Leu Ser Ala Lys Leu Ser
 515 520 525
 Arg Glu Lys Asn Ser Ser Pro Gly Gly Ser Pro Gly Asp Pro Ser Ser
 530 535 540
 Pro Thr Ser Ser Val Ser Pro Gly Ser Pro Pro Ser Ser Pro Arg Asn
 545 550 555 560
 Arg Glu Pro Pro Pro Pro Gly Ser Pro Pro Ala Ser Pro Gly Pro Gln
 565 570 575
 Ser Pro Ser Thr Lys Leu Ser Leu Thr Met Asp Pro Pro Gly Pro Trp
 580 585 590
 Pro Val Thr Leu Thr Pro Ser Ser Ser Arg Val Pro Leu Leu Gly Gln
 595 600 605
 Gln Thr Ser Glu Ala Arg Val Ile Arg Val Ser Ile Asn Asn Asn His
 610 615 620
 Gly Asn Leu Tyr Arg Ser Ile Leu Leu Thr Cys Gln Asp Lys Ala Pro
 625 630 635 640
 Ser Val Val Gln Arg Ala Leu Glu Lys His Asn Val Pro Gln Pro Trp
 645 650 655
 Ala Arg Asp Tyr Gln Leu Phe Gln Val Leu Pro Gly Asp Arg Glu Leu
 660 665 670
 Leu Ile Pro Asp Gly Ala Asn Val Phe Tyr Ala Met Ser Pro Ala Ala
 675 680 685
 Pro Gly Asp Phe Leu Leu Arg Arg Lys Glu Gly Thr Gly His Thr Leu
 690 695 700
 Ser Ala Ser Pro Thr
 705

<210> 333

<211> 343

<212> PRT

<213> Mus musculus

<400> 333

Met Ala Pro Cys Thr Ala Ser Pro Cys Gly Gly Ser Ala Ala Ser Ala
1 5 10 15

Arg Pro Gln Arg Gly Leu Glu Lys Ala Arg Val Asp Ser Lys Arg Thr
20 25 30

Glu Gly Gln Asp Leu Asn Phe Ser Lys Asn Leu Arg Ala Val Val Ser
35 40 45

Val Leu Gly Ser Trp Leu Arg Asn His Pro Gln Asp Phe Arg Asp Pro
50 55 60

Pro Asp His Gln Asn Leu Gly Asn Val Arg Ile Phe Leu Gly Trp Ala
65 70 75 80

Ala Pro Gly Gly Ala Glu Ala Arg Glu Ala Glu Lys Leu Leu Glu Asp
85 90 95

Phe Leu Lys Glu Ala Lys Gly Glu Gln Thr Glu Glu Glu Lys Arg Leu
100 105 110

Ala Trp Ser Gly Pro Pro Arg Ile Ala Gln Thr Pro Gly Ser Glu Phe
115 120 125

Ala Glu Asp Cys Val Glu Glu Glu Gly Pro Ser Ser Glu Gly Pro Glu
130 135 140

Leu Leu Asp Phe Ser Val Asp Asp Val Ala Glu Gln Leu Thr Leu Met
145 150 155 160

Asp Val Glu Leu Phe Leu Arg Val Arg Ser Cys Glu Cys Leu Gly Ser
165 170 175

Met Trp Ser Gln Arg Asp Arg Pro Gly Ala Ala Gly Ile Ser Pro Thr
180 185 190

Val Arg Ala Thr Val Ala Gln Phe Asn Thr Val Thr Gly Cys Val Leu
195 200 205

Gly Ser Val Leu Ala Ala Pro Gly Leu Ala Ala Ser Gln Lys Ala Gln
210 215 220

Arg Ile Glu Lys Trp Ile Arg Ile Ala Gln Arg Cys Arg Glu Leu Arg

Phe Leu Lys Glu Ala Lys Gly Glu Gln Thr Glu Glu Glu Lys Arg Leu
 100 105 110
 Ala Trp Ser Gly Pro Pro Arg Ile Ala Gln Thr Pro Gly Ser Glu Phe
 115 120 125
 Ala Glu Asp Cys Val Glu Glu Glu Gly Pro Ser Ser Glu Gly Pro Glu
 130 135 140
 Leu Leu Asp Phe Ser Val Asp Asp Val Ala Glu Gln Leu Thr Leu Met
 145 150 155 160
 Asp Val Glu Leu Phe Leu Arg Val Arg Ser Cys Glu Cys Leu Gly Ser
 165 170 175
 Met Trp Ser Gln Arg Asp Arg Pro Gly Ala Ala Gly Ile Ser Pro Thr
 180 185 190
 Val Arg Ala Thr Val Ala Gln Phe Asn Thr Val Thr Gly Cys Val Leu
 195 200 205
 Gly Ser Val Leu Ala Ala Pro Gly Leu Ala Ala Ser Gln Lys Ala Gln
 210 215 220
 Arg Ile Glu Lys Trp Ile Arg Ile Ala Gln Arg Cys Arg Glu Leu Arg
 225 230 235 240
 Asn Phe Ser Ser Leu Arg Ala Ile Leu Ser Ala Leu Gln Ser Asn Pro
 245 250 255
 Ile Tyr Arg Leu Lys Arg Ser Trp Gly Ala Val Ser Arg Glu Pro Leu
 260 265 270
 Ser Val Phe Arg Lys Leu Ser Gln Ile Phe Ser Asp Glu Asp Asn His
 275 280 285
 Leu Ser Ser Arg Ala Ile Leu Ser Gln Glu Glu Thr Thr Glu Asp Asp
 290 295 300
 Asp Cys Pro Ser Gly Ser Leu Pro Ser Lys Leu Pro Pro Gly Pro Val
 305 310 315 320
 Pro Tyr Leu Gly Thr Phe Leu Thr Asp Leu Val Met Leu Asp Thr Ala
 325 330 335
 Leu Pro Asp Thr Leu Lys Val
 340

<210> 335
 <211> 709
 <212> PRT
 <213> Mus musculus

<400> 335
 Met Glu Arg Thr Ala Gly Lys Glu Leu Ala Leu Ala Pro Leu Gln Asp
 1 5 10 15
 Trp Gly Glu Glu Thr Glu Asp Gly Ala Val Tyr Ser Val Ser Leu Arg
 20 25 30
 Arg Gln Arg Ser Gln Arg Ser Thr Pro Glu Arg Ser Gly Glu Gly Gln
 35 40 45
 Thr Pro Ile Pro Ala Thr Asp Thr Phe Leu His Tyr Arg Thr Ser Lys
 50 55 60
 Val Arg Ala Leu Arg Ala Ala Arg Leu Glu Arg Leu Val His Glu Leu
 65 70 75 80
 Val Ser Gly Asp Arg Glu Gln Asp Pro Gly Phe Val Pro Ala Phe Leu
 85 90 95
 Ala Thr His Arg Ala Phe Val Pro Thr Ala Arg Val Leu Gly Phe Leu
 100 105 110
 Leu Pro Pro Pro Pro Pro Pro Pro Pro Pro Ala Gly Val Asp Ser
 115 120 125
 Lys Arg Thr Glu Gly Gln Asp Leu Asn Phe Ser Lys Asn Leu Arg Ala
 130 135 140
 Val Val Ser Val Leu Gly Ser Trp Leu Arg Asn His Pro Gln Asp Phe
 145 150 155 160
 Arg Asp Pro Pro Asp His Gln Asn Leu Gly Asn Val Arg Ile Phe Leu
 165 170 175
 Gly Trp Ala Ala Pro Gly Gly Ala Glu Ala Arg Glu Ala Glu Lys Leu
 180 185 190
 Leu Glu Asp Phe Leu Lys Glu Ala Lys Gly Glu Gln Thr Glu Glu Glu
 195 200 205
 Lys Arg Leu Ala Trp Ser Gly Pro Pro Arg Ile Ala Gln Thr Pro Gly
 210 215 220

Ser Glu Phe Ala Glu Asp Cys Val Glu Glu Glu Gly Pro Ser Ser Glu
 225 230 235 240
 Gly Pro Glu Leu Leu Asp Phe Ser Val Asp Asp Val Ala Glu Gln Leu
 245 250 255
 Thr Leu Met Asp Val Glu Leu Phe Leu Arg Val Arg Ser Cys Glu Cys
 260 265 270
 Leu Gly Ser Met Trp Ser Gln Arg Asp Arg Pro Gly Ala Ala Gly Ile
 275 280 285
 Ser Pro Thr Val Arg Ala Thr Val Ala Gln Phe Asn Thr Val Thr Gly
 290 295 300
 Cys Val Leu Gly Ser Val Leu Ala Ala Pro Gly Leu Ala Ala Ser Gln
 305 310 315 320
 Arg Ala Gln Arg Ile Glu Lys Trp Ile Arg Ile Ala Gln Arg Cys Arg
 325 330 335
 Glu Leu Arg Asn Phe Ser Ser Leu Arg Ala Ile Leu Ser Ala Leu Gln
 340 345 350
 Ser Asn Pro Ile Tyr Arg Leu Lys Arg Ser Trp Gly Ala Val Ser Arg
 355 360 365
 Glu Pro Leu Ser Val Phe Arg Lys Leu Ser Gln Ile Phe Ser Asp Glu
 370 375 380
 Asp Asn His Leu Ser Ser Arg Ala Ile Leu Ser Gln Glu Glu Thr Thr
 385 390 395 400
 Glu Asp Asp Asp Cys Pro Ser Gly Ser Leu Pro Ser Lys Leu Pro Pro
 405 410 415
 Gly Pro Val Pro Tyr Leu Gly Thr Phe Leu Thr Asp Leu Val Met Leu
 420 425 430
 Asp Thr Ala Leu Pro Asp Thr Leu Lys Gly Asn Leu Ile Asn Phe Glu
 435 440 445
 Lys Arg Arg Lys Glu Trp Glu Ile Leu Ala Arg Ile Gln Gln Leu Gln
 450 455 460
 Gln Arg Cys Gln Arg Tyr Ser Leu Ser Pro Arg Pro Pro Ile Leu Ala
 465 470 475 480

Ala Leu Arg Ala Gln Arg Gln Leu Ser Glu Glu Gln Ser Tyr Arg Val
485 490 495

Ser Arg Val Ile Glu Pro Pro Ala Ala Ser Cys Pro Ser Ser Pro Arg
500 505 510

Ile Arg Arg Arg Ile Ser Leu Thr Lys Arg Leu Ser Ala Lys Leu Ser
515 520 525

Arg Glu Lys Asn Ser Ser Pro Gly Gly Ser Pro Gly Asp Pro Ser Ser
530 535 540

Pro Thr Ser Ser Val Ser Pro Gly Ser Pro Pro Ser Ser Pro Arg Asn
545 550 555 560

Arg Glu Pro Pro Pro Pro Gly Ser Pro Pro Ala Ser Pro Gly Pro Gln
565 570 575

Ser Pro Ser Thr Lys Leu Ser Leu Thr Met Asp Pro Pro Gly Pro Trp
580 585 590

Pro Val Thr Leu Thr Pro Ser Ser Ser Arg Val Pro Leu Leu Gly Gln
595 600 605

Gln Thr Ser Glu Ala Arg Val Ile Arg Val Ser Ile Asn Asn Asn His
610 615 620

Gly Asn Leu Tyr Arg Ser Ile Leu Leu Thr Cys Gln Asp Lys Ala Pro
625 630 635 640

Ser Val Val Gln Arg Ala Leu Glu Lys His Asn Val Pro Gln Pro Trp
645 650 655

Ala Arg Asp Tyr Gln Leu Phe Gln Val Leu Pro Gly Asp Arg Glu Leu
660 665 670

Leu Ile Pro Asp Gly Ala Asn Val Phe Tyr Ala Met Ser Pro Ala Ala
675 680 685

Pro Gly Asp Phe Leu Leu Arg Arg Lys Glu Gly Thr Gly His Thr Leu
690 695 700

Ser Ala Ser Pro Thr
705

<210> 336

<211> 261

<212> PRT

<213> Homo sapiens

<400> 336

Leu Leu Asp Phe Ser Val Asp Glu Val Ala Glu Gln Leu Thr Leu Ile
1 5 10 15

Asp Leu Glu Leu Phe Ser Lys Val Arg Leu Tyr Glu Cys Leu Gly Ser
20 25 30

Val Trp Ser Gln Arg Asp Arg Pro Gly Ala Ala Gly Ala Ser Pro Thr
35 40 45

Val Arg Ala Thr Val Ala Gln Phe Asn Thr Val Thr Gly Cys Val Leu
50 55 60

Gly Ser Val Leu Gly Ala Pro Gly Leu Ala Ala Pro Gln Arg Ala Gln
65 70 75 80

Arg Leu Glu Lys Trp Ile Arg Ile Ala Gln Arg Cys Arg Glu Leu Arg
85 90 95

Asn Phe Ser Ser Leu Arg Ala Ile Leu Ser Ala Leu Gln Ser Asn Pro
100 105 110

Ile Tyr Arg Leu Lys Arg Ser Trp Gly Ala Val Ser Arg Glu Pro Leu
115 120 125

Ser Thr Phe Arg Lys Leu Ser Gln Ile Phe Ser Asp Glu Asn Asn His
130 135 140

Leu Ser Ser Arg Glu Ile Leu Phe Gln Glu Glu Ala Thr Glu Gly Ser
145 150 155 160

Gln Glu Glu Asp Asn Thr Pro Gly Ser Leu Pro Ser Lys Pro Pro Pro
165 170 175

Gly Pro Val Pro Tyr Leu Gly Thr Phe Leu Thr Asp Leu Val Met Leu
180 185 190

Asp Thr Ala Leu Pro Asp Met Leu Glu Gly Asp Leu Ile Asn Phe Glu
195 200 205

Lys Arg Arg Lys Glu Trp Glu Ile Leu Ala Arg Ile Gln Gln Leu Gln
210 215 220

Arg Arg Cys Gln Ser Tyr Thr Leu Ser Pro His Pro Pro Ile Leu Ala

Val Leu Leu Lys Asp Leu Thr Phe Ile Asp Glu Gly Asn Pro Asp Phe
 165 170 175
 Leu Lys Asn Gly Leu Val Asn Phe Glu Lys Arg Arg Lys Ile Ala Lys
 180 185 190
 Ile Leu Arg Glu Ile Arg Gln Leu Gln Ser Gln Pro Tyr Asn Leu Arg
 195 200 205
 Pro Asn Arg Ser Asp Ile Gln Ser Leu Leu Gln Gln Ser Leu Asp Ser
 210 215 220
 Leu Pro Glu Glu Asn Glu Leu Tyr Glu Leu Ser Leu Arg Ile Glu
 225 230 235

 <210> 338
 <211> 211
 <212> PRT
 <213> Homo sapiens

 <400> 338
 Leu Asp Phe Ser Val Asp Glu Val Ala Glu Gln Leu Thr Leu Ile Asp
 1 5 10 15
 Leu Glu Leu Phe Ser Lys Val Arg Leu Tyr Glu Cys Leu Gly Ser Val
 20 25 30
 Trp Ser Gln Arg Asp Arg Pro Gly Ala Ala Gly Ala Ser Pro Thr Val
 35 40 45
 Arg Ala Thr Val Ala Gln Phe Asn Thr Val Thr Gly Cys Val Leu Gly
 50 55 60
 Ser Val Leu Gly Ala Pro Gly Leu Ala Ala Pro Gln Arg Ala Gln Arg
 65 70 75 80
 Leu Glu Lys Trp Ile Arg Ile Ala Gln Arg Cys Arg Glu Leu Arg Asn
 85 90 95
 Phe Ser Ser Leu Arg Ala Ile Leu Ser Ala Leu Gln Ser Asn Pro Ile
 100 105 110
 Tyr Arg Leu Lys Arg Ser Trp Gly Ala Val Ser Arg Glu Pro Leu Ser
 115 120 125
 Thr Phe Arg Lys Leu Ser Gln Ile Phe Ser Asp Glu Asn Asn His Leu

130
 Ser Ser Arg Glu Ile Leu Phe Gln Glu Glu Ala Thr Glu Gly Ser Gln
 145 150 155 160
 Glu Glu Asp Asn Thr Pro Gly Ser Leu Pro Ser Lys Pro Pro Pro Gly
 165 170 175
 Pro Val Pro Tyr Leu Gly Thr Phe Leu Thr Asp Leu Val Met Leu Asp
 180 185 190
 Thr Ala Leu Pro Asp Met Leu Glu Gly Asp Leu Ile Asn Phe Glu Lys
 195 200 205
 Arg Arg Lys
 210

<210> 339
 <211> 188
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: RasGEF domain
 sequence

<400> 339
 Leu Leu Leu Asp Pro Leu Glu Leu Ala Lys Gln Leu Thr Leu Leu Glu
 1 5 10 15
 His Glu Leu Phe Lys Lys Ile Asp Pro Phe Glu Cys Leu Gly Gln Val
 20 25 30
 Trp Gly Lys Lys Tyr Gly Lys Asn Glu Arg Ser Pro Asn Ile Asp Lys
 35 40 45
 Thr Ile Lys Asn Phe Asn Gln Leu Thr Asn Phe Val Gly Thr Thr Ile
 50 55 60
 Leu Leu Gln Thr Asp Pro Lys Lys Arg Ala Glu Leu Ile Gln Lys Phe
 65 70 75 80
 Ile Gln Val Ala Asp His Cys Arg Glu Leu Asn Asn Phe Asn Ser Leu
 85 90 95
 Leu Ala Ile Ile Ser Ala Leu Tyr Ser Ser Pro Ile Tyr Arg Leu Lys
 100 105 110

Lys Thr Trp Gln Tyr Val Pro Pro Gln Ser Leu Lys Leu Phe Glu Glu
115 120 125

Leu Asn Lys Leu Met Asp Ser Asp Arg Asn Phe Ser Asn Tyr Arg Glu
130 135 140

Leu Leu Lys Ser Ile Phe Pro Leu Pro Cys Val Pro Phe Phe Gly Val
145 150 155 160

Tyr Leu Ser Asp Leu Thr Phe Leu Glu Glu Gly Asn Pro Asp Phe Leu
165 170 175

Glu Thr Asn Leu Val Asn Phe Ser Lys Arg Arg Lys
180 185

<210> 340

<211> 89

<212> PRT

<213> Homo sapiens

<400> 340

Val Leu Arg Val Tyr Phe Gln Asp Leu Lys Pro Gly Val Ala Tyr Lys
1 5 10 15

Thr Ile Arg Val Ser Ser Glu Asp Thr Ala Pro Asp Val Val Gln Leu
20 25 30

Ala Leu Glu Lys Phe Arg Leu Asp Asp Glu Asp Pro Glu Glu Tyr Ala
35 40 45

Leu Val Glu Val Leu Ser Gly Asp Lys Glu Arg Lys Leu Pro Asp Asp
50 55 60

Glu Asn Pro Leu Gln Leu Arg Leu Asn Leu Pro Arg Asp Gly Leu Ser
65 70 75 80

Leu Arg Phe Leu Leu Lys Arg Arg Asp
85

<210> 341

<211> 89

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Ras
association (RalGDS/AF-6) domain sequence

<400> 341

Val Leu Arg Val Tyr Phe Gln Asp Leu Lys Pro Gly Val Ala Tyr Lys
1 5 10 15

Thr Ile Arg Val Ser Ser Glu Asp Thr Ala Pro Asp Val Val Gln Leu
20 25 30

Ala Leu Glu Lys Phe Arg Leu Asp Asp Glu Asp Pro Glu Glu Tyr Ala
35 40 45

Leu Val Glu Val Leu Ser Gly Asp Lys Glu Arg Lys Leu Pro Asp Asp
50 55 60

Glu Asn Pro Leu Gln Leu Arg Leu Asn Leu Pro Arg Asp Gly Leu Ser
65 70 75 80

Leu Arg Phe Leu Leu Lys Arg Arg Asp
85

<210> 342

<211> 83

<212> PRT

<213> Homo sapiens

<400> 342

Val Ile Arg Val Ser Ile Asp Asn Asp His Gly Asn Leu Tyr Arg Ser
1 5 10 15

Ile Leu Leu Thr Ser Gln Asp Lys Ala Pro Ser Val Val Arg Arg Ala
20 25 30

Leu Gln Lys His Asn Val Pro Gln Pro Trp Ala Cys Asp Tyr Gln Leu
35 40 45

Phe Gln Val Leu Pro Gly Asp Arg Leu Leu Ile Pro Asp Asn Ala Asn
50 55 60

Val Phe Tyr Ala Met Ser Pro Val Ala Pro Arg Asp Phe Met Leu Arg
65 70 75 80

Arg Lys Glu

<210> 343
<211> 86
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Ras
association (RalGDS/AF-6) domain sequence

<400> 343
Val Leu Arg Val Tyr Phe Asp Asp Pro Gly Gly Thr Tyr Lys Thr Leu
1 5 10 15
Arg Val Ser Lys Arg Thr Thr Ala Arg Asp Val Ile Gln Gln Leu Leu
20 25 30
Glu Lys Phe His Leu Thr Asp Asp Pro Glu Glu Tyr Val Leu Val Glu
35 40 45
Val Lys Glu Gly Gly Lys Glu Arg Val Leu Leu Pro Asp Glu Lys Pro
50 55 60
Leu Gln Leu Gln Lys Leu Trp Pro Arg Gln Gly Ser Asn Leu Arg Phe
65 70 75 80
Val Leu Arg Lys Arg Asp
85

<210> 344
<211> 75
<212> PRT
<213> Homo sapiens

<400> 344
Asp Pro Ser Phe Met Pro Ala Phe Leu Ala Thr Tyr Arg Thr Phe Val
1 5 10 15
Pro Thr Ala Cys Leu Leu Gly Phe Leu Leu Pro Pro Met Pro Pro Pro
20 25 30
Pro Pro Pro Gly Val Glu Ile Lys Lys Thr Ala Val Gln Asp Leu Ser
35 40 45
Phe Asn Lys Asn Leu Arg Ala Val Val Ser Val Leu Gly Ser Trp Leu
50 55 60
Gln Asp His Pro Gln Asp Phe Arg Asp Pro Pro

65

70

75

<210> 345

<211> 74

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: RasGEFN
domain sequence

<400> 345

Asp	Pro	Thr	Phe	Val	Glu	Thr	Phe	Leu	Leu	Thr	Tyr	Arg	Ser	Phe	Ile
1				5				10						15	

Thr	Thr	Gln	Glu	Leu	Leu	Gln	Lys	Leu	Leu	Tyr	Arg	Tyr	Asn	Ala	Ile
		20					25						30		

Pro	Pro	Glu	Gly	Val	Glu	Asp	Ile	Trp	Val	Lys	Glu	Lys	Val	Asn	Pro
		35					40					45			

Arg	Arg	Ile	Gln	Asn	Arg	Val	Leu	Asn	Ile	Leu	Arg	Leu	Trp	Val	Glu
		50				55					60				

Asn	Tyr	Trp	Gln	Asp	Phe	Glu	Glu	Asp	Pro
65							70		

<210> 346

<211> 184

<212> PRT

<213> Homo sapiens

<400> 346

Met	Ser	Arg	Leu	Ser	Arg	Ser	Leu	Leu	Trp	Ala	Ala	Thr	Cys	Leu	Gly
1				5					10					15	

Val	Leu	Cys	Val	Leu	Ser	Ala	Asp	Lys	Asn	Thr	Thr	Gln	His	Pro	Asn
		20						25				30			

Val	Thr	Thr	Leu	Ala	Pro	Ile	Ser	Asn	Val	Thr	Ser	Ala	Pro	Val	Thr
		35						40				45			

Ser	Leu	Pro	Leu	Val	Thr	Thr	Pro	Ala	Pro	Glu	Thr	Cys	Glu	Gly	Arg
		50					55					60			

Asn	Ser	Cys	Val	Ser	Cys	Phe	Asn	Val	Ser	Val	Val	Asn	Thr	Thr	Cys
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Val Ser Asp Cys Gln Val Gly Asn Thr Thr Asp Phe Cys Ser Val Ser
 100 105 110
 Thr Ala Thr Pro Val Pro Thr Ala Asn Ser Thr Ala Lys Pro Thr Val
 115 120 125
 Gln Pro Ser Pro Ser Thr Thr Ser Lys Thr Val Thr Thr Ser Gly Thr
 130 135 140
 Thr Asn Asn Thr Val Thr Pro Thr Ser Gln Pro Val Arg Lys Ser Thr
 145 150 155 160
 Phe Asp Ala Ala Ser Phe Ile Gly Gly Ile Val Leu Val Leu Gly Val
 165 170 175
 Gln Ala Val Ile Phe Phe Leu Tyr Lys Phe Cys Lys Ser Lys Glu Arg
 180 185 190
 Asn Tyr His Thr Leu
 195

<210> 348
 <211> 178
 <212> PRT
 <213> Homo sapiens

<400> 348
 Met Ser Arg Leu Ser Arg Ser Leu Leu Trp Ala Ala Thr Cys Leu Gly
 1 5 10 15
 Val Leu Cys Val Leu Ser Ala Asp Lys Asn Thr Thr Gln His Pro Asn
 20 25 30
 Val Thr Thr Leu Ala Pro Ile Ser Asn Val Thr Ser Ala Pro Val Thr
 35 40 45
 Ser Leu Pro Leu Val Thr Thr Pro Ala Pro Glu Thr Cys Glu Gly Arg
 50 55 60
 Asn Ser Cys Val Ser Cys Phe Asn Val Ser Val Val Asn Thr Thr Cys
 65 70 75 80
 Phe Trp Ile Glu Cys Lys Asp Glu Ser Tyr Cys Ser His Asn Ser Thr
 85 90 95
 Val Ser Asp Cys Gln Val Gly Asn Thr Thr Asp Phe Cys Ser Val Ser
 100 105 110

Thr Ala Thr Pro Val Pro Thr Ala Asn Ser Thr Gly Thr Thr Asn Asn
115 120 125

Thr Val Thr Pro Thr Ser Gln Pro Val Arg Lys Ser Thr Phe Asp Ala
130 135 140

Ala Ser Phe Ile Gly Gly Ile Val Leu Val Leu Gly Val Gln Ala Val
145 150 155 160

Ile Phe Phe Leu Tyr Lys Phe Cys Lys Ser Lys Glu Arg Asn Tyr His
165 170 175

Thr Leu

<210> 349

<211> 189

<212> PRT

<213> Homo sapiens

<400> 349

Met Ser Arg Leu Ser Arg Ser Leu Leu Trp Ala Ala Thr Cys Leu Gly
1 5 10 15

Val Leu Cys Val Leu Ser Ala Asp Lys Asn Thr Thr Gln His Pro Asn
20 25 30

Val Thr Thr Leu Ala Pro Ile Ser Asn Val Thr Ser Ala Pro Val Thr
35 40 45

Ser Leu Pro Leu Val Thr Thr Pro Ala Pro Glu Thr Cys Glu Gly Arg
50 55 60

Asn Ser Cys Val Ser Cys Phe Asn Val Ser Val Val Asn Thr Thr Cys
65 70 75 80

Phe Trp Ile Glu Cys Lys Asp Glu Ser Tyr Cys Ser His Asn Ser Thr
85 90 95

Val Ser Asp Cys Gln Val Gly Asn Thr Thr Asp Phe Cys Ser Val Ser
100 105 110

Thr Ala Thr Pro Val Pro Thr Ala Asn Ser Thr Ala Lys Pro Thr Val
115 120 125

Gln Pro Ser Pro Ser Thr Thr Ser Lys Thr Val Thr Thr Ser Gly Thr

130 135 140
 Thr Asn Asn Thr Val Thr Pro Thr Ser Gln Pro Val Arg Lys Ser Thr
 145 150 155 160
 Phe Asp Ala Ala Ser Phe Ile Gly Gly Ile Val Leu Val Leu Glu Ile
 165 170 175
 Arg Cys His Thr Arg Asn Tyr Ile Pro Asp Leu Lys Lys
 180 185

 <210> 350
 <211> 195
 <212> PRT
 <213> Rattus norvegicus

 <400> 350
 Met Ser Gly Ala Ser Arg Gly Leu Phe Trp Ala Ala Thr Cys Leu Ala
 1 5 10 15
 Ala Leu Cys Leu Ser Ala Ala Gln Ser Asn Ser Ser Ala Ser Pro Asn
 20 25 30
 Val Thr Asp Pro Pro Thr Thr Thr Ser Lys Val Val Pro Thr Thr Leu
 35 40 45
 Thr Thr Thr Lys Pro Pro Glu Thr Cys Glu Ser Phe Asn Ser Cys Val
 50 55 60
 Ser Cys Val Asn Ala Thr Leu Thr Asn Asn Ile Thr Cys Val Trp Leu
 65 70 75 80
 Asp Cys His Glu Ala Asn Lys Thr Tyr Cys Ser Ser Glu Leu Val Ser
 85 90 95
 Asn Cys Thr Gln Lys Thr Ser Thr Asp Ser Cys Ser Val Ile Pro Thr
 100 105 110
 Thr Pro Val Pro Thr Asn Ser Thr Ala Lys Pro Thr Thr Arg Pro Ser
 115 120 125
 Ser Pro Thr Pro Thr Pro Ser Val Val Thr Ser Ala Gly Ala Thr Asn
 130 135 140
 Thr Thr Val Thr Pro Thr Ser Gln Pro Glu Arg Lys Ser Thr Phe Asp
 145 150 155 160

Ala Ala Ser Phe Ile Gly Gly Ile Val Leu Val Leu Gly Val Gln Ala
165 170 175

Val Ile Phe Phe Leu Tyr Lys Phe Cys Lys Ser Lys Glu Arg Asn Tyr
180 185 190

His Thr Leu
195

<210> 351

<211> 407

<212> PRT

<213> Homo sapiens

<400> 351

Met Ala Val Pro Trp Leu Val Leu Leu Leu Ala Leu Pro Ile Phe Phe
1 5 10 15

Leu Gly Val Phe Val Trp Ala Val Phe Glu His Phe Leu Thr Thr Asp
20 25 30

Ile Pro Ala Thr Leu Gln His Pro Ala Lys Leu Arg Phe Leu His Cys
35 40 45

Ile Phe Leu Tyr Leu Val Thr Leu Gly Asn Ile Phe Glu Lys Leu Gly
50 55 60

Ile Cys Ser Met Pro Lys Phe Ile Arg Phe Leu His Asp Ser Val Arg
65 70 75 80

Ile Lys Lys Asp Pro Glu Leu Val Val Thr Asp Leu Arg Phe Gly Thr
85 90 95

Ile Pro Val Arg Leu Phe Gln Pro Lys Ala Ala Ser Ser Arg Pro Arg
100 105 110

Arg Gly Ile Ile Phe Tyr His Gly Gly Ala Thr Val Phe Gly Ser Leu
115 120 125

Asp Cys Tyr His Gly Leu Cys Asn Tyr Leu Ala Arg Glu Thr Glu Ser
130 135 140

Val Leu Leu Met Ile Gly Tyr Arg Lys Leu Pro Asp His His Ser Pro
145 150 155 160

Ala Leu Phe Gln Asp Cys Met Asn Ala Ser Ile His Phe Leu Lys Ala
165 170 175

Leu Glu Thr Tyr Gly Val Asp Pro Ser Arg Val Val Val Cys Gly Glu
 180 185 190
 Ser Val Gly Gly Ala Ala Val Ala Ala Ile Thr Gln Ala Leu Val Gly
 195 200 205
 Arg Ser Asp Leu Pro Arg Ile Arg Ala Gln Val Leu Ile Tyr Pro Val
 210 215 220
 Val Gln Ala Phe Cys Leu Gln Leu Pro Ser Phe Gln Gln Asn Gln Asn
 225 230 235 240
 Val Pro Leu Leu Ser Arg Lys Phe Met Val Thr Ser Leu Cys Asn Tyr
 245 250 255
 Leu Ala Ile Asp Leu Ser Trp Arg Asp Ala Ile Leu Asn Gly Thr Cys
 260 265 270
 Val Pro Pro Asp Val Trp Arg Lys Tyr Glu Lys Trp Leu Ser Pro Asp
 275 280 285
 Asn Ile Pro Lys Lys Phe Lys Asn Arg Gly Tyr Gln Pro Trp Ser Pro
 290 295 300
 Gly Pro Phe Asn Glu Ala Ala Tyr Leu Glu Ala Lys His Met Leu Asp
 305 310 315 320
 Val Glu Asn Ser Pro Leu Ile Ala Asp Asp Glu Val Ile Ala Gln Leu
 325 330 335
 Pro Glu Ala Phe Leu Val Ser Cys Glu Asn Asp Ile Leu Arg Asp Asp
 340 345 350
 Ser Leu Leu Tyr Lys Lys Arg Leu Glu Asp Gln Gly Val Arg Val Thr
 355 360 365
 Trp Tyr His Leu Tyr Asp Gly Phe His Gly Ser Ile Ile Phe Phe Asp
 370 375 380
 Lys Lys Ala Leu Ser Phe Pro Cys Ser Leu Lys Ile Val Asn Ala Val
 385 390 395 400
 Val Ser Tyr Ile Lys Gly Ile
 405

<210> 352

<211> 409

<212> PRT

<213> Homo sapiens

<400> 352

Met Lys Lys Thr Glu Asp Asn Asn Thr Leu Val Phe Ser Val Asp Val
1 5 10 15

Lys Ala Asn Asn Gly Trp Pro Pro Cys Glu Thr Glu Ser Pro Pro Leu
20 25 30

His Leu Pro Ala Ala Val Asp Met Asp Leu Pro Pro Leu Lys Tyr Asp
35 40 45

Pro Asp Val Val Val Thr Asp Phe Arg Phe Gly Thr Ile Pro Val Lys
50 55 60

Leu Tyr Gln Ser Lys Ala Ser Thr Cys Thr Leu Lys Pro Gly Ile Val
65 70 75 80

Tyr Tyr His Gly Gly Gly Gly Val Met Gly Ser Leu Ser Lys Asn His
85 90 95

Phe Leu Arg Pro Pro Lys Gly Met Asp Trp Arg Val Gly Val Leu Glu
100 105 110

Lys Val Val Gln Ala Val Pro Arg Arg Arg Ile Ser Glu Lys Ile Asp
115 120 125

Arg Lys Phe Ala Gly Val Glu Glu Asn Leu Val Gly Ile Gly Pro Ser
130 135 140

Ala Val Ser Val Gly Arg Arg Arg Tyr Arg Lys Leu Pro Lys His Lys
145 150 155 160

Phe Pro Val Pro Val Arg Asp Cys Leu Val Ala Thr Ile His Phe Leu
165 170 175

Lys Ser Leu Asp Ala Tyr Gly Val Asp Pro Ala Arg Val Val Val Cys
180 185 190

Gly Asp Ser Phe Gly Gly Ala Ile Ala Ala Val Val Cys Gln Gln Leu
195 200 205

Val Asp Arg Pro Asp Leu Pro Arg Ile Arg Ala Gln Ile Leu Ile Tyr
210 215 220

Ala Ile Leu Gln Ala Leu Asp Leu Gln Thr Pro Ser Phe Gln Gln Arg

225		230		235		240
Lys Asn Ile Pro Leu Leu Thr Trp Ser Phe Ile Cys Tyr Cys Phe Phe						
	245		250		255	
Gln Asn Leu Asp Phe Ser Ser Ser Trp Gln Glu Val Ile Met Lys Gly						
	260		265		270	
Ala His Leu Pro Ala Glu Val Trp Glu Lys Tyr Arg Lys Trp Leu Gly						
	275		280		285	
Pro Glu Asn Ile Pro Glu Arg Phe Lys Glu Arg Gly Tyr Gln Leu Lys						
	290		295		300	
Pro His Glu Pro Met Asn Glu Ala Ala Tyr Leu Glu Val Ser Val Val						
305		310		315		320
Leu Asp Val Met Cys Ser Pro Leu Ile Ala Glu Asp Asp Ile Val Ser						
	325		330		335	
Gln Leu Pro Glu Thr Cys Ile Val Ser Cys Glu Tyr Asp Ala Leu Arg						
	340		345		350	
Asp Asn Ser Leu Leu Tyr Lys Lys Arg Leu Glu Asp Leu Gly Val Pro						
	355		360		365	
Val Thr Trp His His Met Glu Asp Gly Phe His Gly Val Leu Arg Thr						
	370		375		380	
Ile Asp Met Ser Phe Leu His Phe Pro Cys Ser Met Arg Ile Leu Ser						
385		390		395		400
Ala Leu Val Gln Phe Val Lys Gly Leu						
	405					

<210> 353

<211> 398

<212> PRT

<213> Oryctolagus cuniculus

<400> 353

Gly Val Lys Thr Val Leu Leu Leu Ile Val Gly Val Leu Gly Ala Tyr
1 5 10 15

Tyr Val Tyr Thr Pro Leu Pro Asp Asn Ile Glu Glu Pro Trp Arg Leu
20 25 30

Leu Trp Val Asn Ala His Met Lys Thr Leu Thr Asn Leu Ala Leu Phe
 35 40 45
 Ala Glu Tyr Leu Gly Ser Asn Ile Phe Met Asn Thr Val Lys Phe Leu
 50 55 60
 Thr Ser Phe Gln Glu Val Pro Pro Thr Ser Asp Glu Asn Val Thr Val
 65 70 75 80
 Thr Glu Thr Thr Phe Asn Asn Val Pro Val Arg Val Tyr Val Pro Lys
 85 90 95
 Arg Lys Ser Lys Thr Leu Arg Arg Gly Leu Phe Tyr Ile His Gly Gly
 100 105 110
 Gly Trp Cys Val Gly Ser Ala Ala Leu Ser Gly Tyr Asp Leu Leu Ser
 115 120 125
 Arg Arg Thr Ala Asp Arg Leu Asp Val Val Val Val Ser Thr Asn Tyr
 130 135 140
 Arg Leu Ala Pro Glu Tyr His Phe Pro Ile Gln Phe Glu Asp Val Tyr
 145 150 155 160
 Asp Ala Leu Lys Trp Phe Leu Arg Gln Asp Val Leu Glu Lys Tyr Gly
 165 170 175
 Val Asp Pro Glu Arg Val Gly Val Ser Gly Asp Ser Ala Gly Gly Asn
 180 185 190
 Leu Ala Ala Ala Val Ala Gln Gln Leu Ile Lys Asp Pro Asp Val Lys
 195 200 205
 Ile Lys Leu Lys Thr Gln Ser Leu Ile Tyr Pro Ala Leu Gln Thr Leu
 210 215 220
 Asp Met Asp Leu Pro Ser Tyr Arg Glu Asn Ala Gln Phe Pro Ile Leu
 225 230 235 240
 Ser Lys Ser Phe Met Val Arg Leu Trp Ser Glu Tyr Phe Thr Ser Asp
 245 250 255
 Arg Ser Leu Glu Lys Ala Met Leu Leu Asn Gln His Val Pro Val Glu
 260 265 270
 Ser Ser His Leu Phe Lys Phe Thr Asn Trp Ser Ser Leu Leu Pro Glu
 275 280 285

Lys Phe Lys Lys Gly His Val Tyr Asn Thr Pro Thr Tyr Gly Ser Ser
290 295 300

Glu Leu Ala Arg Lys Tyr Pro Gly Phe Leu Asp Val Arg Ala Ala Pro
305 310 315 320

Leu Leu Ala Asp Asp Ala Gln Leu Arg Gly Phe Pro Leu Thr Tyr Val
325 330 335

Ile Thr Cys Gln Tyr Asp Val Leu Arg Asp Asp Gly Val Met Tyr Val
340 345 350

Thr Arg Leu Arg Asn Ala Gly Val Gln Val Thr His Asn His Ile Glu
355 360 365

Asp Gly Phe His Gly Ala Leu Ser Tyr Asn Gly Phe Lys Thr Gly Tyr
370 375 380

Arg Val Glu Lys Gln Tyr Phe Glu Trp Leu Arg Glu Asn Val
385 390 395

<210> 354

<211> 399

<212> PRT

<213> Homo sapiens

<400> 354

Met Gly Arg Lys Ser Leu Tyr Leu Leu Ile Val Gly Ile Leu Ile Ala
1 5 10 15

Tyr Tyr Ile Tyr Thr Pro Leu Pro Asp Asn Val Glu Glu Pro Trp Arg
20 25 30

Met Met Trp Ile Asn Ala His Leu Lys Thr Ile Gln Asn Leu Ala Thr
35 40 45

Phe Val Glu Leu His Gly Ser Ser Ile Phe Met Asp Ser Phe Lys Val
50 55 60

Val Gly Ser Phe Asp Glu Val Pro Pro Thr Ser Asp Glu Asn Val Thr
65 70 75 80

Val Thr Glu Thr Lys Phe Asn Asn Ile Leu Val Arg Val Tyr Val Pro
85 90 95

Lys Arg Lys Ser Glu Ala Leu Arg Arg Gly Leu Phe Tyr Ile His Gly
100 105 110

Gly Gly Trp Cys Val Gly Ser Ala Ala Leu Ser Gly Tyr Asp Leu Leu
 115 120 125
 Ser Arg Trp Thr Ala Asp Arg Leu Asp Ala Val Val Val Ser Thr Asn
 130 135 140
 Tyr Arg Leu Ala Pro Lys Tyr His Phe Pro Ile Gln Phe Glu Asp Val
 145 150 155 160
 Tyr Asn Ala Leu Arg Trp Phe Leu Arg Lys Lys Val Leu Ala Lys Tyr
 165 170 175
 Gly Val Asn Pro Glu Arg Ile Gly Ile Ser Gly Asp Ser Ala Gly Gly
 180 185 190
 Asn Leu Ala Ala Ala Val Thr Gln Gln Leu Leu Asp Asp Pro Asp Val
 195 200 205
 Lys Ile Lys Leu Lys Ile Gln Ser Leu Ile Tyr Pro Ala Leu Gln Pro
 210 215 220
 Leu Asp Val Asp Leu Pro Ser Tyr Gln Glu Asn Ser Asn Phe Leu Phe
 225 230 235 240
 Leu Ser Lys Ser Leu Met Val Arg Phe Trp Ser Glu Tyr Phe Thr Thr
 245 250 255
 Asp Arg Ser Leu Glu Lys Ala Met Leu Ser Arg Gln His Val Pro Val
 260 265 270
 Glu Ser Ser His Leu Phe Lys Phe Ile Asn Trp Ser Ser Leu Leu Pro
 275 280 285
 Glu Arg Phe Ile Lys Gly His Val Tyr Asn Asn Pro Asn Tyr Gly Ser
 290 295 300
 Ser Glu Leu Ala Lys Lys Tyr Pro Gly Phe Leu Asp Val Arg Ala Ala
 305 310 315 320
 Pro Leu Leu Ala Asp Asp Asn Lys Leu Arg Gly Leu Pro Leu Thr Tyr
 325 330 335
 Val Ile Thr Cys Gln Tyr Asp Leu Leu Arg Asp Asp Gly Leu Met Tyr
 340 345 350
 Val Thr Arg Leu Arg Asn Thr Gly Val Gln Val Thr His Asn His Val
 355 360 365

Glu Asp Gly Phe His Gly Ala Phe Ser Phe Leu Gly Leu Lys Ile Ser
370 375 380

His Arg Leu Ile Asn Gln Tyr Ile Glu Trp Leu Lys Glu Asn Leu
385 390 395

<210> 355

<211> 398

<212> PRT

<213> Rattus norvegicus

<400> 355

Met Gly Arg Thr Ile Phe Leu Leu Ile Ser Val Val Leu Val Ala Tyr
1 5 10 15

Tyr Ile Tyr Ile Pro Leu Pro Asp Asp Ile Glu Glu Pro Trp Lys Ile
20 25 30

Ile Leu Gly Asn Thr Leu Leu Lys Leu Gly Gly Asp Leu Ala Ser Phe
35 40 45

Gly Glu Leu Leu Gly Leu Asn His Phe Met Asp Thr Val Gln Leu Phe
50 55 60

Met Arg Phe Gln Val Val Pro Pro Thr Ser Asp Glu Asn Val Thr Val
65 70 75 80

Met Glu Thr Asp Phe Asn Ser Val Pro Val Arg Ile Tyr Ile Pro Lys
85 90 95

Arg Lys Ser Thr Thr Leu Arg Arg Gly Leu Phe Phe Ile His Gly Gly
100 105 110

Gly Trp Cys Leu Gly Ser Ala Ala Tyr Phe Met Tyr Asp Thr Leu Ser
115 120 125

Arg Arg Thr Ala His Arg Leu Asp Ala Val Val Val Ser Thr Asp Tyr
130 135 140

Gly Leu Ala Pro Lys Tyr His Phe Pro Lys Gln Phe Glu Asp Val Tyr
145 150 155 160

His Ser Leu Arg Trp Phe Leu Gln Glu Asp Ile Leu Glu Lys Tyr Gly
165 170 175

Val Asp Pro Arg Arg Val Gly Val Ser Gly Asp Ser Ala Gly Gly Asn

Leu Phe Gln Pro Lys Ala Ala Ser Ser Arg Pro Arg Arg Gly Ile Ile
 1 5 10 15
 Phe Tyr His Gly Gly Ala Thr Val Phe Gly Ser Leu Asp Cys Tyr His
 20 25 30
 Gly Leu Cys Asn Tyr Leu Ala Arg Glu Thr Glu Ser Val Leu Leu Met
 35 40 45
 Ile Gly Tyr Arg Lys Leu Pro Asp His His Ser Pro Ala Leu Phe Gln
 50 55 60
 Asp Cys Met Asn Ala Ser Ile His Phe Leu Lys Ala Leu Glu Thr Tyr
 65 70 75 80
 Gly Val Asp Pro Ser Arg Val Val Val Cys Gly Glu Ser Val Gly Gly
 85 90 95
 Ala Ala Val Ala Ala Ile Thr Gln Ala Leu Val Gly Arg
 100 105

<210> 357

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:
 Carboxylesterase domain sequence

<400> 357

Val Tyr Thr Pro Lys Asn Arg Lys Pro Asn Ser Lys Leu Pro Val Met
 1 5 10 15
 Val Trp Ile His Gly Gly Gly Phe Met Phe Gly Ser Gly Leu Ser Leu
 20 25 30
 Tyr Asp Gly Glu Ser Leu Ala Arg Glu Gly Asn Val Ile Val Val Ser
 35 40 45
 Ile Asn Tyr Arg Leu Gly Pro Leu Gly Phe Leu Ser Thr Gly Asp Asp
 50 55 60
 Val Leu Pro Gly Asn Tyr Gly Leu Leu Asp Gln Arg Leu Ala Leu Lys
 65 70 75 80
 Trp Val Gln Asp Asn Ile Ala Ala Phe Gly Gly Asp Pro Asp Ser Val

Ile Ile Leu Ser Tyr Ile Leu Ile Val Ala Ala Val Leu His Ile Pro
180 185 190

Ser Ser Ser Gly Cys Gln Lys Ala Phe Ser Thr Cys Ala Ser His Leu
195 200 205

Thr Val Val Val Leu Gly Tyr Gly Ser Ala Ile Phe Ile Tyr Val Arg
210 215 220

Pro Gly Lys Gly His Ser Thr Tyr Leu Asn Lys Ala Val Ala Met Val
225 230 235 240

Thr Ala Met Val Thr Pro Phe Leu Asn Pro Phe Ile Phe Thr Phe Arg
245 250 255

Asn Glu Lys Val Lys Glu Val Ile Glu Asp Val Thr Lys Arg Ile Phe
260 265 270

Leu Gly Asp Pro Ala Ala Cys Arg
275 280

<210> 359

<211> 216

<212> PRT

<213> Homo sapiens

<400> 359

Leu Met Glu Met Val Val Thr Ser Thr Val Val His Arg Met Leu Ala
1 5 10 15

Asp Leu Leu Ser Thr His Lys Thr Met Ser Leu Ala Lys Cys Leu Thr
20 25 30

Gln Ser Phe Phe Tyr Phe Ser Leu Gly Ser Ala Asn Phe Leu Ile Leu
35 40 45

Met Val Met Ala Phe Asp Arg Tyr Val Ala Ile Cys His Pro Leu Arg
50 55 60

Tyr Pro Thr Ile Thr Asn Gly Pro Val Cys Val Lys Leu Val Val Ala
65 70 75 80

Cys Trp Val Val Gly Phe Leu Ser Ile Val Ser Pro Thr Leu Gln Lys
85 90 95

Thr Arg Leu Trp Phe Cys Gly Pro Asn Ile Ile Gly His Tyr Phe Cys
100 105 110

Asp Ser Ala Pro Leu Leu Lys Leu Ala Cys Ser Asp Thr Arg His Ile
115 120 125

Glu Arg Met Asp Leu Phe Leu Ser Leu Leu Phe Val Leu Thr Thr Met
130 135 140

Leu Leu Ile Ile Leu Ser Tyr Ile Leu Ile Val Ala Ala Val Leu His
145 150 155 160

Ile Pro Ser Ser Ser Gly Cys Gln Lys Ala Phe Ser Thr Cys Ala Ser
165 170 175

His Leu Thr Val Val Val Leu Gly Tyr Gly Ser Ala Ile Phe Ile Tyr
180 185 190

Val Arg Pro Gly Lys Gly His Ser Thr Tyr Leu Asn Lys Ala Val Ala
195 200 205

Met Val Thr Ala Met Val Thr Pro
210 215

<210> 360

<211> 1056

<212> PRT

<213> Homo sapiens

<400> 360

Met Pro Val Leu Leu Pro Val His Phe Ser Ala Lys Cys Pro Leu Leu
1 5 10 15

Leu Leu Cys Asp Pro Ala Asn Pro Pro Ser Glu Pro Leu Pro Ser Gln
20 25 30

Gly Cys Phe Ile Phe Ile His Arg Val Leu Leu Asp Leu Ser Thr Ala
35 40 45

Gly Glu Ser Gly Asn Thr Ala Gly Phe Ile Cys Asp Gln Ala Leu Leu
50 55 60

Thr Ser Pro Val Arg Glu Asp Gly Ala Glu Asn Gly Leu Gly Phe His
65 70 75 80

Gln Pro Val Glu Leu His Ile Cys Gly Asp Ala Val Gly Phe Val Gly
85 90 95

Met Gly Gln Arg Arg Lys Pro Met Ser Val Pro Trp Ser His Pro Lys

100	105	110
Ile Ser Glu Lys Cys Ala Ser Asp Thr Trp Cys Thr Asp Ala Thr Tyr		
115	120	125
His Arg Glu His Ser Lys Pro Ser Gly Pro Trp Glu His Gly Pro Leu		
130	135	140
Lys Pro Phe Glu Asp Trp Val Pro Ala Leu Pro Tyr Pro Leu Trp Pro		
145	150	155
Gln Glu Leu Leu His Cys Gly Ser Gln Ser Gly Asp Cys Met Cys Leu		
165	170	175
Leu Leu Leu Glu Ser Ser Arg Arg Ser Pro Pro Thr Leu Pro Ile Pro		
180	185	190
Leu Thr Phe Pro Arg Leu Cys Gln Ser Phe Pro Leu Leu Thr Ala Ser		
195	200	205
Gly Lys Glu Pro Ser Cys Gly Phe Thr Ser Ala Leu Arg Arg Leu Tyr		
210	215	220
Gly Cys Gly Ala Ala Glu Arg Pro Gln Ser Pro Val Thr Pro Lys Thr		
225	230	235
Glu Thr Ser Glu Gln Gly Pro Lys Asp Pro Pro Ile His Leu Ala His		
245	250	255
Pro Ser Asp Arg Ala Leu Ser Pro Ser Cys Phe Leu Ser Leu Arg Ala		
260	265	270
Val Ile Leu Thr Cys Lys Asn Arg Asp Ala Gln Val Glu Glu Gly His		
275	280	285
Arg Arg Glu Pro Pro Val Leu Asp Cys Gly Tyr Gln Arg Ser Gly Thr		
290	295	300
Arg Gly Asn His Thr Arg Arg Ile Cys Ser Thr Leu Arg Gly Ser Arg		
305	310	315
Ile Glu Ala Trp Val Ala Ala Ala Thr Leu Gln Arg Gly Pro Tyr Phe		
325	330	335
Arg Lys Gln Gln Pro Leu Gly Lys Asp Ser Trp Ser Val Ala Glu Asp		
340	345	350
Trp Ile Glu Ala Phe Met Leu Ala Phe Gly Val Arg Val Leu Trp Asp		

610		615		620	
Gly Leu Pro Asn Leu Asn Ser Ala Arg Val Glu Leu Phe Ser Val Phe					
625		630		635	640
Leu Leu Val Tyr Leu Leu Asn Leu Thr Gly Asn Val Leu Ile Val Gly					
	645		650		655
Val Val Arg Ala Asp Thr Arg Leu Gln Thr Pro Met Tyr Phe Phe Leu					
	660		665		670
Gly Asn Leu Ser Cys Leu Glu Ile Leu Leu Thr Ser Val Ile Ile Pro					
	675		680		685
Lys Met Leu Ser Asn Phe Leu Ser Arg Gln His Thr Ile Ser Phe Ala					
	690		695		700
Ala Cys Ile Thr Gln Phe Tyr Phe Tyr Phe Phe Leu Gly Ala Ser Glu					
705		710		715	720
Phe Leu Leu Leu Ala Val Met Ser Ala Asp Arg Tyr Leu Ala Ile Cys					
	725		730		735
His Pro Leu Arg Tyr Pro Leu Leu Met Ser Gly Ala Val Cys Phe Arg					
	740		745		750
Val Ala Leu Ala Cys Trp Val Gly Gly Leu Val Pro Val Leu Gly Pro					
	755		760		765
Thr Val Ala Val Ala Leu Leu Pro Phe Cys Lys Gln Gly Ala Val Val					
	770		775		780
Gln His Phe Phe Cys Asp Ser Gly Pro Leu Leu Arg Leu Ala Cys Thr					
785		790		795	800
Asn Thr Lys Lys Leu Glu Glu Thr Asp Phe Val Leu Ala Ser Leu Val					
	805		810		815
Ile Val Ser Ser Leu Leu Ile Thr Ala Val Ser Tyr Gly Leu Ile Val					
	820		825		830
Leu Ala Val Leu Ser Ile Pro Ser Ala Ser Gly Arg Gln Lys Ala Phe					
	835		840		845
Ser Thr Cys Thr Ser His Leu Ile Val Val Thr Leu Phe Tyr Gly Ser					
	850		855		860
Ala Ile Phe Leu Tyr Val Arg Pro Ser Gln Ser Gly Ser Val Asp Thr					

865	870	875	880
Asn Trp Ala Val Thr Val Ile Thr Thr Phe Val Thr Pro Leu Leu Asn	885	890	895
Pro Phe Ile Tyr Ala Leu Arg Asn Glu Gln Val Lys Glu Ala Leu Lys	900	905	910
Asp Met Phe Arg Lys Gly Cys Asp Phe Ala Phe Glu Arg Cys Asn Ser	915	920	925
Ala Cys Asn Cys Arg Lys Gly Ser Leu Thr Thr Thr Thr Lys Ser Ala	930	935	940
Thr Leu Arg Cys Gly Ala Gly Ala Lys Ala Arg Ala Gly Ala Arg Leu	945	950	955
His Pro Ala Ala Gly Ser Pro Arg Asp Ser Arg Lys Val Asn Val Arg	965	970	975
Val Gln Lys Asp Pro Arg Arg Ser Val Pro Lys Val Glu Thr Phe Ile	980	985	990
Ser Gly Ser Gly Pro Ser Cys Val Gly Gln Cys Thr Gly Arg Val Cys	995	1000	1005
Ile Leu Lys Gly Thr Arg Thr Ile Ser Gly Gly Leu Trp Leu Glu Asp	1010	1015	1020
Pro Arg Lys Thr Arg Thr Thr Asp Phe Thr His Arg Lys Ile Lys Val	1025	1030	1035
Thr Ala Gly Leu Ala Gly Glu Lys Val Glu Pro Thr Leu Pro Arg Cys	1045	1050	1055

<210> 361

<211> 313

<212> PRT

<213> Homo sapiens

<400> 361

Met	Ala	Asn	Leu	Ser	Gln	Pro	Ser	Glu	Phe	Val	Leu	Leu	Gly	Phe	Ser
1				5					10					15	

Ser Phe Gly Glu Leu Gln Ala Leu Leu Tyr Gly Pro Phe Leu Met Leu
 20 25 30
 Tyr Leu Leu Ala Phe Met Gly Asn Thr Ile Ile Ile Val Met Val Ile
 35 40 45
 Ala Asp Thr His Leu His Thr Pro Met Tyr Phe Phe Leu Gly Asn Phe
 50 55 60
 Ser Leu Leu Glu Ile Leu Val Thr Met Thr Ala Val Pro Arg Met Leu
 65 70 75 80
 Ser Asp Leu Leu Val Pro His Lys Val Ile Thr Phe Thr Gly Cys Met
 85 90 95
 Val Gln Phe Tyr Phe His Phe Ser Leu Gly Ser Thr Ser Phe Leu Ile
 100 105 110
 Leu Thr Asp Met Ala Leu Asp Arg Phe Val Ala Ile Cys His Pro Leu
 115 120 125
 Arg Tyr Gly Thr Leu Met Ser Arg Ala Met Cys Val Gln Leu Ala Gly
 130 135 140
 Ala Ala Trp Ala Ala Pro Phe Leu Ala Met Val Pro Thr Val Leu Ser
 145 150 155 160
 Arg Ala His Leu Asp Tyr Cys His Gly Asp Val Ile Asn His Phe Phe
 165 170 175
 Cys Asp Asn Glu Pro Leu Leu Gln Leu Ser Cys Ser Asp Thr Arg Leu
 180 185 190
 Leu Glu Phe Trp Asp Phe Leu Met Ala Leu Thr Phe Val Leu Ser Ser
 195 200 205
 Phe Leu Val Thr Leu Ile Ser Tyr Gly Tyr Ile Val Thr Thr Val Leu
 210 215 220
 Arg Ile Pro Ser Ala Ser Ser Cys Gln Lys Ala Phe Ser Thr Cys Gly
 225 230 235 240
 Ser His Leu Thr Leu Val Phe Ile Gly Tyr Ser Ser Thr Ile Phe Leu
 245 250 255
 Tyr Val Arg Pro Gly Lys Ala His Ser Val Gln Val Arg Lys Val Val
 260 265 270

Ala Leu Val Thr Ser Val Leu Thr Pro Phe Leu Asn Pro Phe Ile Leu
275 280 285

Thr Phe Cys Asn Gln Thr Val Lys Thr Val Leu Gln Gly Gln Met Gln
290 295 300

Arg Leu Lys Gly Leu Cys Lys Ala Gln
305 310

<210> 362

<211> 347

<212> PRT

<213> Homo sapiens

<400> 362

Met Gly Asn Trp Thr Ala Ala Val Thr Glu Phe Val Leu Leu Gly Phe
1 5 10 15

Ser Leu Ser Arg Glu Val Glu Leu Leu Leu Val Leu Leu Leu Pro
20 25 30

Thr Phe Leu Leu Thr Leu Leu Gly Asn Leu Leu Ile Ile Ser Thr Val
35 40 45

Leu Ser Cys Ser Arg Leu His Thr Pro Met Tyr Phe Phe Leu Cys Asn
50 55 60

Leu Ser Ile Leu Asp Ile Leu Phe Thr Ser Val Ile Ser Pro Lys Val
65 70 75 80

Leu Ala Asn Leu Gly Ser Arg Asp Lys Thr Ile Ser Phe Ala Gly Cys
85 90 95

Ile Thr Gln Cys Tyr Phe Tyr Phe Phe Leu Gly Thr Val Glu Phe Leu
100 105 110

Leu Leu Thr Val Met Ser Tyr Asp Arg Tyr Ala Thr Ile Cys Cys Pro
115 120 125

Leu Arg Tyr Thr Thr Ile Met Arg Pro Ser Val Cys Ile Gly Thr Val
130 135 140

Val Phe Ser Trp Val Gly Gly Phe Leu Ser Val Leu Phe Pro Thr Ile
145 150 155 160

Leu Ile Ser Gln Leu Pro Phe Cys Gly Ser Asn Ile Ile Asn His Phe
165 170 175

Phe Cys Asp Ser Gly Pro Leu Leu Ala Leu Ala Cys Ala Asp Thr Thr
 180 185 190
 Ala Ile Glu Leu Met Asp Phe Met Leu Ser Ser Met Val Ile Leu Cys
 195 200 205
 Cys Ile Val Leu Val Ala Tyr Ser Tyr Thr Tyr Ile Ile Leu Thr Ile
 210 215 220
 Val Arg Ile Pro Ser Ala Ser Gly Arg Lys Lys Ala Phe Asn Thr Cys
 225 230 235 240
 Ala Ser His Leu Thr Ile Val Ile Ile Pro Ser Gly Ile Thr Val Phe
 245 250 255
 Ile Tyr Val Thr Pro Ser Gln Lys Glu Tyr Leu Glu Ile Asn Lys Ile
 260 265 270
 Pro Leu Val Leu Ser Ser Val Val Thr Pro Phe Leu Asn Pro Phe Ile
 275 280 285
 Tyr Thr Leu Arg Asn Asp Thr Val Gln Gly Val Leu Arg Asp Val Trp
 290 295 300
 Val Arg Val Arg Gly Val Phe Glu Lys Arg Met Arg Ala Val Leu Arg
 305 310 315 320
 Ser Arg Leu Ser Ser Asn Lys Asp His Gln Gly Arg Ala Cys Ser Ser
 325 330 335
 Pro Pro Cys Val Tyr Ser Val Lys Leu Gln Cys
 340 345

<210> 363

<211> 246

<212> PRT

<213> Homo sapiens

<400> 363

Ile Ile Ser Phe Ile Cys Leu Asp Ser Arg Leu His Ser Pro Met Tyr
 1 5 10 15

Phe Phe Leu Cys Asn Phe Ser Leu Met Glu Met Val Val Thr Ser Thr
 20 25 30

Val Val His Arg Met Leu Ala Asp Leu Leu Ser Thr His Lys Thr Met

<223> Description of Artificial Sequence: 7tm_1, 7
transmembrane receptor domain sequence

<400> 364

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Val Ile Leu Val Ile Leu Arg Thr Lys Lys Leu Arg Thr Pro Thr Asn
  1             5             10             15

Ile Phe Leu Leu Asn Leu Ala Val Ala Asp Leu Leu Phe Leu Leu Thr
      20             25             30

Leu Pro Pro Trp Ala Leu Tyr Tyr Leu Val Gly Gly Asp Trp Val Phe
      35             40             45

Gly Asp Ala Leu Cys Lys Leu Val Gly Ala Leu Phe Val Val Asn Gly
      50             55             60

Tyr Ala Ser Ile Leu Leu Leu Thr Ala Ile Ser Ile Asp Arg Tyr Leu
      65             70             75             80

Ala Ile Val His Pro Leu Arg Tyr Arg Arg Ile Arg Thr Pro Arg Arg
      85             90             95

Ala Lys Val Leu Ile Leu Leu Val Trp Val Leu Ala Leu Leu Leu Ser
      100            105            110

Leu Pro Pro Leu Leu Phe Ser Trp Leu Arg Thr Val Glu Glu Gly Asn
      115            120            125

Thr Thr Val Cys Leu Ile Asp Phe Pro Glu Glu Ser Val Lys Arg Ser
      130            135            140

Tyr Val Leu Leu Ser Thr Leu Val Gly Phe Val Leu Pro Leu Leu Val
      145            150            155            160

Ile Leu Val Cys Tyr Thr Arg Ile Leu Arg Thr Leu Arg Lys Arg Ala
      165            170            175

Arg Ser Gln Arg Ser Leu Lys Arg Arg Ser Ser Ser Glu Arg Lys Ala
      180            185            190

Ala Lys Met Leu Leu Val Val Val Val Phe Val Leu Cys Trp Leu
      195            200            205

Pro Tyr His Ile Val Leu Leu Leu Asp Ser Leu Cys Leu Leu Ser Ile
      210            215            220

Trp Arg Val Leu Pro Thr Ala Leu Leu Ile Thr Leu Trp Leu Ala Tyr
      225            230            235            240

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Val Asn Ser Cys Leu Asn Pro Ile Ile Tyr
245 250

<210> 365
<211> 559
<212> PRT
<213> Homo sapiens

<400> 365
Met Ala Pro Thr Leu Gln Gln Ala Tyr Arg Arg Arg Trp Trp Met Ala
1 5 10 15
Cys Thr Ala Val Leu Glu Asn Leu Phe Phe Ser Ala Val Leu Leu Gly
20 25 30
Trp Gly Ser Leu Leu Ile Ile Leu Lys Asn Glu Gly Phe Tyr Ser Ser
35 40 45
Thr Cys Pro Ala Glu Ser Ser Thr Asn Thr Thr Gln Asp Glu Gln Arg
50 55 60
Arg Trp Pro Gly Cys Asp Gln Gln Asp Glu Met Leu Asn Leu Gly Phe
65 70 75 80
Thr Ile Gly Ser Phe Val Leu Ser Ala Thr Thr Leu Pro Leu Gly Ile
85 90 95
Leu Met Asp Arg Phe Gly Pro Arg Pro Val Arg Leu Val Gly Ser Ala
100 105 110
Cys Phe Thr Ala Ser Cys Thr Leu Met Ala Leu Ala Ser Arg Asp Val
115 120 125
Glu Ala Leu Ser Pro Leu Ile Phe Leu Ala Leu Ser Leu Asn Gly Phe
130 135 140
Gly Gly Ile Cys Leu Thr Phe Thr Ser Leu Thr Leu Pro Asn Met Phe
145 150 155 160
Gly Asn Leu Arg Ser Thr Leu Met Ala Leu Met Ile Gly Ser Tyr Ala
165 170 175
Ser Ser Ala Ile Thr Phe Pro Gly Ile Lys Leu Ile Tyr Asp Ala Gly
180 185 190
Val Ala Phe Val Val Ile Met Phe Thr Trp Ser Gly Leu Ala Cys Leu

195 200 205
 Ile Phe Leu Asn Cys Thr Leu Asn Trp Pro Ile Glu Ala Phe Pro Ala
 210 215 220
 Pro Glu Glu Val Asn Tyr Thr Lys Lys Ile Lys Leu Ser Gly Leu Ala
 225 230 235 240
 Leu Asp His Lys Val Thr Gly Asp Leu Phe Tyr Thr His Val Thr Thr
 245 250 255
 Met Gly Gln Arg Leu Ser Gln Lys Ala Pro Ser Leu Glu Asp Gly Ser
 260 265 270
 Asp Ala Phe Met Ser Pro Gln Asp Val Arg Gly Thr Ser Glu Asn Leu
 275 280 285
 Pro Glu Arg Ser Val Pro Leu Arg Lys Ser Leu Cys Ser Pro Thr Phe
 290 295 300
 Leu Trp Ser Leu Leu Thr Met Gly Met Thr Gln Leu Arg Ile Ile Phe
 305 310 315 320
 Tyr Met Ala Ala Val Asn Lys Met Leu Glu Tyr Leu Val Thr Gly Gly
 325 330 335
 Gln Glu His Glu Thr Asn Glu Gln Gln Lys Val Ala Glu Thr Val
 340 345 350
 Gly Phe Tyr Ser Ser Val Phe Gly Ala Met Gln Leu Leu Cys Leu Leu
 355 360 365
 Thr Cys Pro Leu Ile Gly Tyr Ile Met Asp Trp Arg Ile Lys Asp Cys
 370 375 380
 Val Asp Ala Pro Thr Gln Gly Thr Val Leu Gly Asp Ala Arg Asp Gly
 385 390 395 400
 Val Ala Thr Lys Ser Ile Arg Pro Arg Tyr Cys Lys Ile Gln Lys Leu
 405 410 415
 Thr Asn Ala Ile Ser Ala Phe Thr Leu Thr Asn Leu Leu Leu Val Gly
 420 425 430
 Phe Gly Ile Thr Cys Leu Ile Asn Asn Leu His Leu Gln Phe Val Thr
 435 440 445
 Phe Val Leu His Thr Ile Val Arg Gly Phe Phe His Ser Ala Cys Gly
 455

450 455 460
 Ser Leu Tyr Ala Ala Val Phe Pro Ser Asn His Phe Gly Thr Leu Thr
 465 470 475 480
 Gly Leu Gln Ser Leu Ile Ser Ala Val Phe Ala Leu Leu Gln Gln Pro
 485 490 495
 Leu Phe Met Ala Met Val Gly Pro Leu Lys Gly Glu Pro Phe Trp Val
 500 505 510
 Asn Leu Gly Leu Leu Leu Phe Ser Leu Leu Gly Phe Leu Leu Pro Ser
 515 520 525
 Tyr Leu Phe Tyr Tyr Arg Ala Arg Leu Gln Gln Glu Tyr Ala Ala Asn
 530 535 540
 Gly Met Gly Pro Leu Lys Val Leu Ser Gly Ser Glu Val Thr Ala
 545 550 555

 <210> 366
 <211> 654
 <212> PRT
 <213> Mus musculus

 <400> 366
 Met Pro Trp Leu Pro Gly Phe Thr Tyr Leu Trp Arg Gln Asp Gly Ser
 1 5 10 15
 Gln Ile His Cys Phe Phe Arg Gly Arg Arg Arg Gly Glu Thr Gly Gly
 20 25 30
 Ser Glu Ala Arg Trp Val Trp His Ala Gly Lys Thr Pro Arg Val Asp
 35 40 45
 Ala Ile Trp Asn Trp Asp Pro Gly Ser Gln Glu Ile Arg Ser Val Glu
 50 55 60
 Ala Pro Gly Arg Leu Cys Val Thr Pro Gly Val Lys Ser Cys Gly Arg
 65 70 75 80
 Gln Val Cys Arg Gly Gln Ser Leu Gly His His Gly Ser His Ala Glu
 85 90 95
 Ala Gly Val Pro Gln Arg Trp Trp Met Ala Cys Thr Ala Val Val Glu
 100 105 110

Asn Leu Phe Phe Ser Ala Val Leu Leu Gly Trp Ala Ser Leu Leu Ile
 115 120 125
 Met Leu Lys Lys Glu Gly Phe Tyr Ser Ser Leu Cys Pro Ala Glu Asn
 130 135 140
 Arg Thr Asn Thr Thr Gln Asp Glu Gln His Gln Trp Thr Ser Cys Asp
 145 150 155 160
 Gln Gln Glu Lys Met Leu Asn Leu Gly Phe Thr Ile Gly Ser Phe Leu
 165 170 175
 Leu Ser Ala Thr Thr Leu Pro Leu Gly Ile Leu Met Asp Arg Phe Gly
 180 185 190
 Pro Arg Pro Leu Arg Leu Val Gly Ser Ala Cys Phe Ala Ala Ser Cys
 195 200 205
 Thr Leu Met Ala Leu Ala Ser Arg Asp Thr Glu Val Leu Ser Pro Leu
 210 215 220
 Ile Phe Leu Ala Leu Ser Leu Asn Gly Phe Ala Gly Ile Cys Leu Thr
 225 230 235 240
 Phe Thr Ser Leu Thr Leu Pro Asn Met Phe Gly Asn Leu Arg Ser Thr
 245 250 255
 Phe Met Ala Leu Met Ile Gly Ser Tyr Ala Ser Ser Ala Ile Thr Phe
 260 265 270
 Pro Gly Ile Lys Leu Ile Tyr Asp Ala Gly Val Pro Phe Thr Val Ile
 275 280 285
 Met Phe Thr Trp Ser Gly Leu Ala Cys Leu Ile Phe Leu Asn Cys Ala
 290 295 300
 Leu Asn Trp Pro Ala Glu Ala Phe Pro Ala Pro Glu Glu Val Asp Tyr
 305 310 315 320
 Thr Lys Lys Ile Lys Leu Ile Gly Leu Ala Leu Asp His Lys Val Thr
 325 330 335
 Gly Asp Arg Phe Tyr Thr His Val Thr Ile Val Gly Gln Arg Leu Ser
 340 345 350
 Gln Lys Ser Pro Ser Leu Glu Glu Gly Ala Asp Ala Phe Ile Ser Ser
 355 360 365

Pro Asp Ile Pro Gly Thr Ser Glu Glu Thr Pro Glu Lys Ser Val Pro
 370 375 380

Phe Arg Lys Ser Leu Cys Ser Pro Ile Phe Leu Trp Ser Leu Val Thr
 385 390 395 400

Met Gly Met Thr Gln Leu Arg Val Ile Phe Tyr Met Gly Ala Met Asn
 405 410 415

Lys Ile Leu Glu Phe Ile Val Thr Gly Gly Lys Glu Arg Glu Thr Asn
 420 425 430

Glu Gln Arg Gln Lys Val Glu Glu Thr Val Glu Phe Tyr Ser Ser Ile
 435 440 445

Phe Gly Val Met Gln Leu Leu Cys Leu Leu Thr Cys Pro Leu Ile Gly
 450 455 460

Tyr Ile Met Asp Trp Arg Ile Lys Asp Cys Val Asp Ala Pro Thr Glu
 465 470 475 480

Gly Thr Leu Asn Glu Asn Ala Ser Phe Gly Asp Ala Arg Asp Gly Ala
 485 490 495

Ser Thr Lys Phe Thr Arg Pro Arg Tyr Arg Lys Val Gln Lys Leu Thr
 500 505 510

Asn Ala Ile Asn Ala Phe Thr Leu Thr Asn Ile Leu Leu Val Gly Phe
 515 520 525

Gly Ile Ala Cys Leu Ile Lys Asn Leu His Leu Gln Leu Leu Ala Phe
 530 535 540

Val Leu His Thr Ile Val Arg Gly Phe Phe His Ser Ala Cys Gly Gly
 545 550 555 560

Leu Tyr Ala Ala Val Phe Pro Ser Asn His Phe Gly Thr Leu Thr Gly
 565 570 575

Leu Gln Ser Leu Ile Ser Ala Val Phe Ala Leu Leu Gln Gln Leu Leu
 580 585 590

Phe Met Ala Met Val Gly Pro Leu His Gly Asp Pro Phe Trp Val Asn
 595 600 605

Leu Gly Leu Leu Leu Leu Ser Phe Leu Gly Phe Leu Leu Pro Ser Tyr
 610 615 620

Leu Tyr Tyr Tyr Arg Ser Arg Leu Gln Arg Glu Tyr Ala Thr Asn Leu
625 630 635 640

Val Asp Pro Gln Lys Val Leu Asn Thr Ser Lys Val Ala Thr
645 650

<210> 367

<211> 401

<212> PRT

<213> Homo sapiens

<400> 367

Met Phe Gly Asn Leu Arg Ser Thr Leu Met Ala Leu Met Ile Gly Ser
1 5 10 15

Tyr Ala Ser Ser Ala Ile Thr Phe Pro Gly Ile Lys Leu Ile Tyr Asp
20 25 30

Ala Gly Val Ala Phe Val Val Ile Met Phe Thr Trp Ser Gly Leu Ala
35 40 45

Cys Leu Ile Phe Leu Asn Cys Thr Leu Asn Trp Pro Ile Glu Ala Phe
50 55 60

Pro Ala Pro Glu Glu Val Asn Tyr Thr Lys Lys Ile Lys Leu Ser Gly
65 70 75 80

Leu Ala Leu Asp His Lys Val Thr Gly Asp Leu Phe Tyr Thr His Val
85 90 95

Thr Thr Met Gly Gln Arg Leu Ser Gln Lys Ala Pro Ser Leu Glu Asp
100 105 110

Gly Ser Asp Ala Phe Met Ser Pro Gln Asp Val Arg Gly Thr Ser Glu
115 120 125

Asn Leu Pro Glu Arg Ser Val Pro Leu Arg Lys Ser Leu Cys Ser Pro
130 135 140

Thr Phe Leu Trp Ser Leu Leu Thr Met Gly Met Thr Gln Leu Arg Ile
145 150 155 160

Ile Phe Tyr Met Ala Ala Val Asn Lys Met Leu Glu Tyr Leu Val Thr
165 170 175

Gly Gly Gln Glu His Glu Thr Asn Glu Gln Gln Gln Lys Val Ala Glu
180 185 190

Thr Val Gly Phe Tyr Ser Ser Val Phe Gly Ala Met Gln Leu Leu Cys
 195 200 205
 Leu Leu Thr Cys Pro Leu Ile Gly Tyr Ile Met Asp Trp Arg Ile Lys
 210 215 220
 Asp Cys Val Asp Ala Pro Thr Gln Gly Thr Val Leu Gly Asp Ala Arg
 225 230 235 240
 Asp Gly Val Ala Thr Lys Ser Ile Arg Pro Arg Tyr Cys Lys Ile Gln
 245 250 255
 Lys Leu Thr Asn Ala Ile Ser Ala Phe Thr Leu Thr Asn Leu Leu Leu
 260 265 270
 Val Gly Phe Gly Ile Thr Cys Leu Ile Asn Asn Leu His Leu Gln Phe
 275 280 285
 Val Thr Phe Val Leu His Thr Ile Val Arg Gly Phe Phe His Ser Ala
 290 295 300
 Cys Gly Ser Leu Tyr Ala Ala Val Phe Pro Ser Asn His Phe Gly Thr
 305 310 315 320
 Leu Thr Gly Leu Gln Ser Leu Ile Ser Ala Val Phe Ala Leu Leu Gln
 325 330 335
 Gln Pro Leu Phe Met Ala Met Val Gly Pro Leu Lys Gly Glu Pro Phe
 340 345 350
 Trp Val Asn Leu Gly Leu Leu Leu Phe Ser Leu Leu Gly Phe Leu Leu
 355 360 365
 Pro Ser Tyr Leu Phe Tyr Tyr Arg Ala Arg Leu Gln Gln Glu Tyr Ala
 370 375 380
 Ala Asn Gly Met Gly Pro Leu Lys Val Leu Ser Gly Ser Glu Val Thr
 385 390 395 400
 Ala

<210> 368

<211> 489

<212> PRT

<213> Homo sapiens

<400> 368

Met Ala Pro Thr Leu Ala Thr Ala His Arg Arg Arg Trp Trp Met Ala
1 5 10 15

Cys Thr Pro Val Leu Glu Asn Leu Leu Phe Ser Ala Val Leu Leu Gly
20 25 30

Trp Gly Ser Leu Leu Ile Met Leu Lys Ser Glu Gly Phe Tyr Ser Tyr
35 40 45

Leu Cys Thr Glu Pro Glu Asn Val Thr Asn Gly Thr Val Gly Gly Thr
50 55 60

Ala Glu Pro Gly His Glu Glu Val Ser Trp Met Asn Gly Trp Leu Ser
65 70 75 80

Cys Gln Ala Gln Asp Glu Met Leu Asn Leu Ala Phe Thr Val Gly Ser
85 90 95

Phe Leu Leu Ser Ala Ile Thr Leu Pro Leu Gly Ile Val Met Asp Lys
100 105 110

Tyr Gly Pro Arg Lys Leu Arg Leu Leu Gly Ser Ala Cys Phe Ala Val
115 120 125

Ser Cys Leu Leu Ile Ala Tyr Gly Ala Ser Lys Pro Asn Ala Leu Ser
130 135 140

Val Leu Ile Phe Ile Ala Leu Ala Leu Asn Gly Phe Gly Gly Met Cys
145 150 155 160

Met Thr Phe Thr Ser Leu Thr Leu Pro Asn Met Phe Gly Asp Leu Arg
165 170 175

Ser Thr Phe Ile Ala Leu Met Ile Gly Ser Tyr Ala Ser Ser Ala Val
180 185 190

Thr Phe Pro Gly Ile Lys Leu Ile Tyr Asp Ala Gly Val Ser Phe Ile
195 200 205

Val Val Leu Val Val Trp Ala Gly Cys Ser Gly Leu Val Phe Leu Asn
210 215 220

Cys Phe Phe Asn Trp Pro Leu Glu Pro Phe Pro Gly Pro Glu Asp Met
225 230 235 240

Asp Tyr Ser Val Lys Ile Lys Phe Ser Trp Leu Gly Phe Asp His Lys

<210> 369

<211> 373

<212> PRT

<213> Homo sapiens

<400> 369

Ile Lys Leu Ile Tyr Asp Ala Gly Val Ser Phe Ile Val Val Leu Val
1 5 10 15

Val Trp Ala Gly Cys Ser Gly Leu Val Phe Leu Asn Cys Phe Phe Asn
20 25 30

Trp Pro Leu Glu Pro Phe Pro Gly Pro Glu Asp Met Asp Tyr Ser Val
35 40 45

Lys Ile Lys Phe Ser Trp Leu Gly Phe Asp His Lys Ile Thr Gly Lys
50 55 60

Gln Phe Tyr Lys Gln Val Thr Thr Val Gly Arg Arg Leu Ser Val Gly
65 70 75 80

Ser Ser Met Arg Ser Ala Lys Glu Gln Val Ala Leu Gln Glu Gly His
85 90 95

Lys Leu Cys Leu Ser Thr Val Asp Leu Glu Val Lys Cys Gln Pro Asp
100 105 110

Ala Ala Val Val Pro Ser Phe Met His Ser Val Phe Ser Pro Ile Leu
115 120 125

Leu Leu Ser Leu Val Thr Met Cys Val Thr Gln Leu Arg Leu Ile Phe
130 135 140

Tyr Met Gly Ala Met Asn Asn Ile Leu Lys Phe Leu Val Ser Gly Asp
145 150 155 160

Gln Lys Thr Val Gly Leu Tyr Thr Ser Ile Phe Gly Val Leu Gln Leu
165 170 175

Leu Cys Leu Leu Thr Ala Pro Val Ile Gly Tyr Ile Met Asp Trp Arg
180 185 190

Leu Lys Glu Cys Glu Asp Ala Ser Glu Glu Pro Glu Glu Lys Asp Ala
195 200 205

Asn Gln Gly Glu Lys Lys Lys Lys Arg Asp Arg Gln Ile Gln Lys
210 215 220

Ile Thr Asn Ala Met Arg Ala Phe Ala Phe Thr Asn Leu Leu Leu Val
 225 230 235 240
 Gly Phe Gly Val Thr Cys Leu Ile Pro Asn Leu Pro Leu Gln Ile Leu
 245 250 255
 Ser Phe Ile Leu His Thr Ile Val Arg Gly Phe Ile His Ser Ala Val
 260 265 270
 Gly Gly Leu Tyr Ala Ala Val Tyr Pro Ser Thr Gln Phe Gly Ser Leu
 275 280 285
 Thr Gly Leu Gln Ser Leu Ile Ser Ala Leu Phe Ala Leu Leu Gln Gln
 290 295 300
 Pro Leu Phe Leu Ala Met Met Gly Pro Leu Gln Gly Asp Pro Leu Trp
 305 310 315 320
 Val Asn Val Gly Leu Leu Leu Ser Leu Leu Gly Phe Cys Leu Pro
 325 330 335
 Leu Tyr Leu Ile Cys Tyr Arg Arg Gln Leu Glu Arg Gln Leu Gln Gln
 340 345 350
 Arg Gln Glu Asp Asp Lys Leu Phe Leu Lys Ile Asn Gly Ser Ser Asn
 355 360 365
 Gln Glu Ala Phe Val
 370

<210> 370
 <211> 125
 <212> PRT
 <213> Homo sapiens

<400> 370
 Met Ala Gly Pro Ser Leu Ala Cys Cys Leu Leu Gly Leu Leu Ala Leu
 1 5 10 15
 Thr Ser Ala Cys Tyr Ile Gln Asn Cys Pro Leu Gly Gly Lys Arg Ala
 20 25 30
 Ala Pro Asp Leu Asp Val Arg Lys Cys Leu Pro Cys Gly Pro Gly Gly
 35 40 45
 Lys Gly Arg Cys Phe Gly Pro Asn Ile Cys Cys Ala Glu Glu Leu Gly
 50 55 60

Cys Phe Val Gly Thr Ala Glu Ala Leu Arg Cys Gln Glu Glu Asn Tyr
65 70 75 80

Leu Pro Ser Pro Cys Gln Ser Gly Gln Lys Ala Cys Gly Ser Gly Gly
85 90 95

Arg Cys Ala Val Leu Gly Leu Cys Cys Ser Pro Asp Gly Cys His Ala
100 105 110

Asp Pro Ala Cys Asp Ala Glu Ala Thr Phe Ser Gln Arg
115 120 125

<210> 371

<211> 124

<212> PRT

<213> Homo sapiens

<400> 371

Met Ala Gly Pro Ser Leu Ala Cys Cys Leu Leu Gly Leu Leu Ala Leu
1 5 10 15

Thr Ser Ala Cys Tyr Ile Gln Asn Cys Pro Leu Gly Gly Lys Arg Ala
20 25 30

Ala Pro Asp Leu Asp Val Arg Lys Cys Leu Pro Cys Gly Pro Gly Gly
35 40 45

Lys Gly Arg Cys Phe Gly Pro Asn Ile Cys Cys Ala Glu Glu Leu Gly
50 55 60

Cys Phe Val Gly Thr Ala Glu Ala Leu Arg Cys Gln Glu Glu Asn Tyr
65 70 75 80

Leu Pro Ser Pro Cys Gln Ser Gly Gln Lys Ala Cys Gly Ser Gly Gly
85 90 95

Arg Cys Ala Leu Gly Leu Cys Cys Ser Pro Asp Gly Cys His Ala Asp
100 105 110

Pro Ala Cys Asp Ala Glu Ala Thr Phe Ser Gln Arg
115 120

<210> 372

<211> 125

<212> PRT

<213> *Sus scrofa*

<400> 372

Met Ala Gly Pro Ser Leu Ala Cys Cys Leu Leu Gly Leu Leu Ala Leu
1 5 10 15
Thr Ser Ala Cys Tyr Ile Gln Asn Cys Pro Leu Gly Gly Lys Arg Ala
20 25 30
Val Leu Asp Leu Asp Val Arg Lys Cys Leu Pro Cys Gly Pro Gly Gly
35 40 45
Lys Gly Arg Cys Phe Gly Pro Ser Ile Cys Cys Gly Asp Glu Leu Gly
50 55 60
Cys Phe Val Gly Thr Ala Glu Ala Leu Arg Cys Gln Glu Glu Asn Tyr
65 70 75 80
Leu Pro Ser Pro Cys Gln Ser Gly Gln Lys Pro Cys Gly Ser Glu Gly
85 90 95
Arg Cys Ala Ala Ala Gly Ile Cys Cys Asn Pro Asp Gly Cys Arg Phe
100 105 110
Asp Pro Ala Cys Asp Pro Glu Ala Thr Phe Ser Gln Arg
115 120 125

<210> 373

<211> 125

<212> PRT

<213> *Ovis aries*

<400> 373

Met Ala Gly Ser Ser Leu Ala Cys Cys Leu Leu Gly Leu Leu Ala Leu
1 5 10 15
Thr Ser Ala Cys Tyr Ile Gln Asn Cys Pro Leu Gly Gly Lys Arg Ala
20 25 30
Val Leu Asp Leu Asp Val Arg Thr Cys Leu Pro Cys Gly Pro Gly Gly
35 40 45
Lys Gly Arg Cys Phe Gly Pro Ser Ile Cys Cys Gly Asp Glu Leu Gly
50 55 60
Cys Phe Val Gly Thr Ala Glu Ala Leu Arg Cys Arg Glu Glu Asn Tyr
65 70 75 80

Leu Pro Ser Pro Cys Gln Ser Gly Gln Lys Pro Cys Gly Ser Gly Gly
85 90 95

Arg Cys Ala Ala Ala Gly Ile Cys Cys Ser Pro Asp Gly Cys His Ala
100 105 110

Asp Pro Ala Cys Asp Pro Glu Ala Ala Phe Ser Gln His
115 120 125

<210> 374

<211> 125

<212> PRT

<213> Bos taurus

<400> 374

Met Ala Gly Ser Ser Leu Ala Cys Cys Leu Leu Gly Leu Leu Ala Leu
1 5 10 15

Thr Ser Ala Cys Tyr Ile Gln Asn Cys Pro Leu Gly Gly Lys Arg Ala
20 25 30

Val Leu Asp Leu Asp Val Arg Thr Cys Leu Pro Cys Gly Pro Gly Gly
35 40 45

Lys Gly Arg Cys Phe Gly Pro Ser Ile Cys Cys Gly Asp Glu Leu Gly
50 55 60

Cys Phe Val Gly Thr Ala Glu Ala Leu Arg Cys Gln Glu Glu Asn Tyr
65 70 75 80

Leu Pro Ser Pro Cys Gln Ser Gly Gln Lys Pro Cys Gly Ser Gly Gly
85 90 95

Arg Cys Ala Ala Ala Gly Ile Cys Cys Ser Pro Asp Gly Cys His Glu
100 105 110

Asp Pro Ala Cys Asp Pro Glu Ala Ala Phe Ser Gln His
115 120 125

<210> 375

<211> 56

<212> PRT

<213> Homo sapiens

<400> 375

Glu Glu Leu Gly Cys Phe Val Gly Thr Ala Glu Ala Leu Arg Cys Gln
 1 5 10 15

Glu Glu Asn Tyr Leu Pro Ser Pro Cys Gln Ser Gly Gln Lys Ala Cys
 20 25 30

Gly Ser Gly Gly Arg Cys Ala Val Leu Gly Leu Cys Cys Ser Pro Asp
 35 40 45

Gly Cys His Ala Asp Pro Ala Cys
 50 55

<210> 376

<211> 57

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:

Neurohypophysial hormones domain sequence

<400> 376

Glu Glu Leu Gly Cys Tyr Val Gly Thr Pro Glu Thr Ala Arg Cys Gln
 1 5 10 15

Glu Glu Asn Tyr Leu Pro Ser Pro Cys Glu Ala Gly Gly Lys Pro Cys
 20 25 30

Gly Ser Asp Ala Gly Arg Cys Ala Ala Pro Gly Val Cys Cys Asp Ser
 35 40 45

Glu Ser Cys Val Val Asp Pro Glu Cys
 50 55

<210> 377

<211> 56

<212> PRT

<213> Homo sapiens

<400> 377

Glu Glu Leu Gly Cys Phe Val Gly Thr Ala Glu Ala Leu Arg Cys Gln
 1 5 10 15

Glu Glu Asn Tyr Leu Pro Ser Pro Cys Gln Ser Gly Gln Lys Ala Cys
 20 25 30

Gly Ser Gly Gly Arg Cys Ala Val Leu Gly Leu Cys Cys Ser Pro Asp
 35 40 45

Gly Cys His Ala Asp Pro Ala Cys
 50 55

<210> 378

<211> 57

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:
 Neurohypophysial hormones domain sequence

<400> 378

Glu Glu Leu Gly Cys Tyr Val Gly Thr Pro Glu Thr Ala Arg Cys Gln
 1 5 10 15

Glu Glu Asn Tyr Leu Pro Ser Pro Cys Glu Ser Gly Gly Arg Pro Cys
 20 25 30

Gly Ser Asp Gly Gly Arg Cys Ala Ala Pro Gly Ile Cys Cys Asp Ser
 35 40 45

Glu Ser Cys Ala Ala Asp Pro Ser Cys
 50 55

<210> 379

<211> 158

<212> PRT

<213> Homo sapiens

<400> 379

Met Ser Asp Lys Ser Asn Met Asp Glu Ile Glu Lys Phe Ser Lys Ser
 1 5 10 15

Lys Leu Lys Lys Thr Glu Met Gln Glu Lys Asn Pro Gln Pro Ser Lys
 20 25 30

Glu Trp Ile Glu Gln Glu Lys Gln Ala Gly Phe Cys Ala Met Ala Ala
 35 40 45

Asn Ser Ser Phe Leu Gly Gly Val His Gly Leu Phe Leu Val Trp Val
 50 55 60

Ala Leu Arg Val Leu Gly Asp Arg Pro Phe Lys Cys Thr Phe Met Ser
65 70 75 80

Leu Thr Leu His Tyr Pro Arg Cys Arg Leu Glu Thr Gly Ile Gln Gly
85 90 95

Ala Phe Gly Lys Pro Gln Gly Thr Val Ala Arg Val His Ile Gly Gln
100 105 110

Val Lys Ser Ile Cys Thr Lys Leu Gln Asn Lys Glu His Val Ile Glu
115 120 125

Ala Pro Cys Arg Ala Lys Phe Lys Phe Pro Gly His Gln Lys Ile His
130 135 140

Ile Ser Lys Lys Trp Gly Phe Thr Lys Phe Asn Val Asp Glu
145 150 155

<210> 380

<211> 56

<212> PRT

<213> Rattus norvegicus

<400> 380

Leu Phe Ala Gln Leu Ala Gln Leu Leu Pro Ala Thr Met Ser Asp Lys
1 5 10 15

Pro Asp Met Ala Glu Ile Glu Lys Phe Asp Lys Ser Lys Leu Lys Lys
20 25 30

Thr Glu Thr Gln Glu Lys Asn Pro Leu Pro Ser Lys Glu Thr Ile Glu
35 40 45

Gln Glu Lys Gln Ala Gly Glu Ser
50 55

<210> 381

<211> 50

<212> PRT

<213> Mus musculus

<400> 381

Met Leu Leu Pro Ala Thr Met Ser Asp Lys Pro Asp Met Ala Glu Ile
1 5 10 15

Glu Lys Phe Asp Lys Ser Lys Leu Lys Lys Thr Glu Thr Gln Glu Lys

1 5 10 15
 Met Gln Glu Lys Asn Pro Gln Pro Ser Lys Glu Trp Ile Glu Gln Glu
 20 25 30
 Lys Gln Ala Gly
 35

<210> 385
 <211> 36
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Thymosin beta
 actin-binding motif sequence

<400> 385
 Thr Asp Glu Ile Glu Asn Phe Asp Ser Glu Asn Leu Lys Lys Thr Glu
 1 5 10 15
 Thr Ile Glu Lys Asn Val Leu Pro Ser Lys Glu Asp Ile Glu Gln Glu
 20 25 30
 Lys Gln Leu Gln
 35

<210> 386
 <211> 41
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Thymosin
 beta-4 family domain sequence

<400> 386
 Ser Asp Lys Pro Asp Leu Glu Glu Ile Ala Ser Phe Asp Lys Ala Lys
 1 5 10 15
 Leu Lys Lys Thr Glu Thr Gln Glu Lys Asn Pro Leu Pro Thr Lys Glu
 20 25 30
 Thr Ile Glu Gln Glu Lys Gln Ala Glu
 35 40

<210> 387
 <211> 36
 <212> PRT
 <213> Homo sapiens

<400> 387
 Met Asp Glu Ile Glu Lys Phe Ser Lys Ser Lys Leu Lys Lys Thr Glu
 1 5 10 15
 Met Gln Glu Lys Asn Pro Gln Pro Ser Lys Glu Trp Ile Glu Gln Glu
 20 25 30
 Lys Gln Ala Gly
 35

<210> 388
 <211> 132
 <212> PRT
 <213> Mus musculus

<400> 388
 Met Val Asp Gln Leu Gln Gly Thr Trp Lys Ser Val Ser Cys Asp Asn
 1 5 10 15
 Phe Glu Asn Tyr Met Lys Glu Leu Gly Val Gly Arg Ala Ser Arg Lys
 20 25 30
 Leu Gly Cys Leu Ala Lys Pro Thr Val Thr Ile Ser Thr Asp Gly Asp
 35 40 45
 Leu Ile Thr Ile Lys Thr Lys Ser Ile Phe Lys Asn Lys Glu Ile Ser
 50 55 60
 Phe Lys Leu Gly Glu Glu Phe Glu Glu Thr Thr Pro Ser Gly Arg Lys
 65 70 75 80
 Ser Lys Ser Thr Val Ile Leu Asp Asn Asp Ser Leu Val Gln Val Gln
 85 90 95
 Asp Trp Asp Gly Lys Glu Ala Thr Ile Cys Arg Arg Leu Val Asp Gly
 100 105 110
 Lys Met Val Val Glu Ser Ala Val Asn Asn Val Thr Cys Thr Arg Thr
 115 120 125
 Tyr Gln Arg Val

130

<210> 389

<211> 132

<212> PRT

<213> *Oryzctolagus cuniculus*

<400> 389

Met Ser Asn Lys Phe Leu Gly Thr Trp Lys Leu Val Ser Ser Glu Asn
1 5 10 15

Phe Asp Asp Tyr Met Lys Ala Leu Gly Val Gly Leu Ala Thr Arg Lys
20 25 30

Leu Gly Asn Leu Ala Lys Pro Asn Val Ile Ile Ser Lys Lys Gly Asp
35 40 45

Ile Ile Thr Ile Arg Thr Glu Ser Thr Phe Lys Asn Thr Glu Ile Ser
50 55 60

Phe Lys Leu Gly Gln Glu Phe Glu Glu Thr Thr Ala Asp Asn Arg Lys
65 70 75 80

Thr Lys Ser Ile Ile Thr Leu Glu Arg Gly Ala Leu Asn Gln Val Gln
85 90 95

Lys Trp Asp Gly Lys Glu Thr Thr Ile Lys Arg Lys Leu Val Asp Gly
100 105 110

Lys Met Val Val Glu Cys Lys Met Lys Gly Val Val Cys Thr Arg Ile
115 120 125

Tyr Glu Lys Val
130

<210> 390

<211> 132

<212> PRT

<213> *Homo sapiens*

<400> 390

Met Ser Asn Lys Phe Leu Gly Thr Trp Lys Leu Val Ser Ser Glu Asn
1 5 10 15

Phe Asp Asp Tyr Met Lys Ala Leu Gly Val Gly Leu Ala Thr Arg Lys
20 25 30

Leu Gly Asn Leu Ala Lys Pro Thr Val Ile Ile Ser Lys Lys Gly Asp
35 40 45

Ile Ile Thr Ile Arg Thr Glu Ser Thr Phe Lys Asn Thr Glu Ile Ser
50 55 60

Phe Lys Leu Gly Gln Glu Phe Glu Glu Thr Thr Ala Asp Asn Arg Lys
65 70 75 80

Thr Lys Ser Ile Val Thr Leu Gln Arg Gly Ser Leu Asn Gln Val Gln
85 90 95

Arg Trp Asp Gly Lys Glu Thr Thr Ile Lys Arg Lys Leu Val Asn Gly
100 105 110

Lys Met Val Ala Glu Cys Lys Met Lys Gly Val Val Cys Thr Arg Ile
115 120 125

Tyr Glu Lys Val
130

<210> 391
<211> 132
<212> PRT
<213> Mus musculus

<400> 391
Met Ser Asn Lys Phe Leu Gly Thr Trp Lys Leu Val Ser Ser Glu His
1 5 10 15

Phe Asp Asp Tyr Met Lys Ala Leu Gly Val Gly Leu Ala Asn Arg Lys
20 25 30

Leu Gly Asn Leu Ala Lys Pro Thr Val Ile Ile Ser Lys Lys Gly Asp
35 40 45

Tyr Ile Thr Ile Arg Thr Glu Ser Ala Phe Lys Asn Thr Glu Ile Ser
50 55 60

Phe Lys Leu Gly Gln Glu Phe Asp Glu Thr Thr Ala Asp Asn Arg Lys
65 70 75 80

Ala Lys Ser Ile Val Thr Leu Glu Arg Gly Ser Leu Lys Gln Val Gln
85 90 95

Lys Trp Asp Gly Lys Glu Thr Ala Ile Arg Arg Thr Leu Leu Asp Gly

100	105	110
Arg Met Val Val Glu Cys Ile Met Lys Gly Val Val Cys Thr Arg Ile		
115	120	125
Tyr Glu Lys Val		
130		
<210> 392		
<211> 132		
<212> PRT		
<213> Bos taurus		
<400> 392		
Met Cys Asp Ala Phe Val Gly Thr Trp Lys Leu Val Ser Ser Glu Asn		
1	5	10 15
Phe Asp Asp Tyr Met Lys Glu Val Gly Val Gly Phe Ala Thr Arg Lys		
20	25	30
Val Ala Gly Met Ala Lys Pro Thr Leu Ile Ile Ser Leu Asn Gly Gly		
35	40	45
Val Val Thr Ile Lys Ser Glu Ser Thr Phe Lys Asn Thr Glu Ile Ser		
50	55	60
Phe Lys Leu Gly Gln Glu Phe Asp Glu Ile Thr Pro Asp Asp Arg Lys		
65	70	75 80
Val Lys Ser Ile Val Asn Leu Asp Glu Gly Ala Leu Val Gln Val Gln		
85	90	95
Asn Trp Asp Gly Lys Ser Thr Thr Ile Lys Arg Lys Leu Met Asp Asp		
100	105	110
Lys Met Val Leu Glu Cys Val Met Asn Gly Val Thr Ala Thr Arg Val		
115	120	125
Tyr Glu Arg Ala		
130		
<210> 393		
<211> 129		
<212> PRT		
<213> Homo sapiens		

<400> 393

Gln Leu Gln Gly Thr Trp Lys Ser Ile Ser Cys Glu Asn Ser Glu Asp
1 5 10 15

Tyr Met Lys Glu Leu Gly Ile Gly Arg Ala Ser Arg Lys Leu Gly Arg
20 25 30

Leu Ala Lys Pro Thr Val Thr Ile Ser Thr Asp Gly Asp Val Ile Thr
35 40 45

Ile Lys Thr Lys Ser Ile Phe Lys Asn Asn Glu Ile Ser Phe Lys Leu
50 55 60

Gly Glu Glu Phe Glu Glu Ile Thr Pro Gly Gly His Lys Thr Lys Ser
65 70 75 80

Lys Val Thr Leu Asp Lys Glu Ser Leu Ile Gln Val Gln Asp Trp Asp
85 90 95

Gly Lys Glu Thr Thr Ile Thr Arg Lys Leu Val Asp Gly Lys Met Val
100 105 110

Val Glu Ser Thr Val Asn Ser Val Ile Cys Thr Arg Thr Tyr Glu Lys
115 120 125

Val

<210> 394

<211> 145

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: lipocalin
domain sequence

<400> 394

Lys Phe Ala Gly Lys Trp Tyr Leu Val Ala Ser Ala Asn Phe Asp Pro
1 5 10 15

Glu Leu Lys Glu Glu Leu Gly Val Leu Glu Ala Thr Arg Lys Glu Ile
20 25 30

Thr Pro Leu Lys Glu Gly Asn Leu Glu Ile Val Phe Asp Gly Asp Lys
35 40 45

Asn Gly Ile Cys Glu Glu Thr Phe Gly Lys Leu Glu Lys Thr Lys Lys
 50 55 60

Leu Gly Val Glu Phe Asp Tyr Tyr Thr Gly Asp Asn Arg Phe Val Val
 65 70 75 80

Leu Asp Thr Asp Tyr Asp Asn Tyr Leu Leu Val Cys Val Gln Lys Gly
 85 90 95

Asp Gly Asn Glu Thr Ser Arg Thr Ala Glu Leu Tyr Gly Arg Thr Pro
 100 105 110

Glu Leu Ser Pro Glu Ala Leu Glu Leu Phe Glu Thr Ala Thr Lys Glu
 115 120 125

Leu Gly Ile Pro Glu Asp Asn Val Val Cys Thr Arg Gln Thr Glu Arg
 130 135 140

Cys
 145

<210> 395

<211> 132

<212> PRT

<213> Homo sapiens

<400> 395

Met Val Glu Pro Phe Leu Gly Thr Trp Lys Leu Val Ser Ser Glu Asn
 1 5 10 15

Phe Glu Asp Tyr Met Lys Glu Leu Gly Val Asn Phe Ala Ala Arg Asn
 20 25 30

Met Ala Gly Leu Val Lys Pro Thr Val Thr Ile Ser Val Asp Gly Lys
 35 40 45

Met Met Thr Ile Arg Thr Glu Ser Ser Phe Gln Asp Thr Lys Ile Ser
 50 55 60

Phe Lys Leu Gly Glu Glu Phe Asp Glu Thr Thr Ala Asp Asn Arg Lys
 65 70 75 80

Val Lys Ser Thr Ile Thr Leu Glu Asn Gly Ser Met Ile His Val Gln
 85 90 95

Lys Trp Leu Gly Lys Glu Thr Thr Ile Lys Arg Lys Ile Val Asp Glu
 100 105 110

Lys Met Val Val Glu Cys Lys Met Asn Asn Ile Val Ser Thr Arg Ile
115 120 125

Tyr Glu Lys Val
130

<210> 396
<211> 132
<212> PRT
<213> Mus musculus

<400> 396
Met Ile Glu Pro Phe Leu Gly Thr Trp Lys Leu Ile Ser Ser Glu Asn
1 5 10 15

Phe Glu Asn Tyr Val Arg Glu Leu Gly Val Glu Cys Glu Pro Arg Lys
20 25 30

Val Ala Cys Leu Ile Lys Pro Ser Val Ser Ile Ser Phe Asn Gly Glu
35 40 45

Arg Met Asp Ile Gln Ala Gly Ser Ala Cys Arg Asn Thr Glu Ile Ser
50 55 60

Phe Lys Leu Gly Glu Glu Phe Glu Glu Thr Thr Ala Asp Asn Arg Lys
65 70 75 80

Val Lys Ser Leu Ile Thr Phe Glu Gly Gly Ser Met Ile Gln Val Gln
85 90 95

Lys Trp Leu Gly Lys Gln Thr Thr Ile Lys Arg Lys Ile Val Asp Gly
100 105 110

Lys Met Val Val Glu Cys Thr Met Asn Asn Val Val Ser Thr Arg Ile
115 120 125

Tyr Glu Arg Val
130

<210> 397
<211> 132
<212> PRT
<213> Mus musculus

<400> 397

Met Ile Glu Pro Phe Leu Gly Thr Trp Lys Leu Val Ser Ser Glu Asn
 1 5 10 15
 Phe Glu Asn Tyr Val Arg Glu Leu Gly Val Glu Cys Glu Pro Arg Lys
 20 25 30
 Val Ala Cys Leu Ile Lys Pro Ser Val Ser Ile Ser Phe Asn Gly Glu
 35 40 45
 Arg Met Asp Ile Gln Ala Gly Ser Ala Cys Arg Asn Thr Lys Ile Ser
 50 55 60
 Phe Lys Leu Gly Glu Glu Phe Glu Glu Thr Thr Ala Asp Asn Arg Lys
 65 70 75 80
 Val Lys Ser Leu Ile Thr Phe Glu Gly Gly Ser Met Ile Gln Ile Gln
 85 90 95
 Arg Trp Leu Gly Lys Gln Thr Thr Ile Lys Arg Arg Ile Val Asp Gly
 100 105 110
 Arg Met Val Val Glu Cys Thr Met Asn Asn Val Val Ser Thr Arg Thr
 115 120 125
 Tyr Glu Arg Val
 130

<210> 398
 <211> 132
 <212> PRT
 <213> Rattus norvegicus

<400> 398
 Met Ile Glu Pro Phe Leu Gly Thr Trp Lys Leu Val Ser Ser Glu Asn
 1 5 10 15
 Phe Glu Asn Tyr Val Arg Glu Leu Gly Val Glu Cys Glu Pro Arg Lys
 20 25 30
 Val Ala Cys Leu Ile Lys Pro Ser Val Ser Ile Ser Phe Asn Gly Glu
 35 40 45
 Arg Met Asp Ile Gln Ala Gly Ser Ala Cys Arg Asn Thr Glu Ile Ser
 50 55 60
 Phe Lys Leu Gly Glu Glu Phe Glu Glu Thr Thr Ala Asp Asn Arg Lys
 65 70 75 80

Val Lys Ser Leu Ile Thr Phe Glu Gly Gly Ser Met Ile Gln Ile Gln
85 90 95

Arg Trp Leu Gly Lys Gln Thr Thr Ile Lys Arg Arg Ile Val Asp Gly
100 105 110

Arg Met Val Val Glu Cys Thr Met Asn Asn Val Val Ser Thr Arg Thr
115 120 125

Tyr Glu Arg Val
130

<210> 399

<211> 132

<212> PRT

<213> Sus scrofa

<400> 399

Met Cys Asp Ala Phe Val Gly Thr Trp Lys Leu Val Ser Ser Glu Asn
1 5 10 15

Phe Asp Asp Tyr Met Lys Glu Val Gly Val Gly Phe Ala Thr Arg Lys
20 25 30

Val Ala Gly Met Ala Lys Pro Asn Leu Ile Ile Thr Val Asn Gly Asp
35 40 45

Met Ile Thr Ile Arg Ser Glu Ser Thr Phe Lys Asn Thr Glu Ile Ala
50 55 60

Phe Lys Leu Gly Gln Glu Phe Asp Glu Val Thr Ala Asp Asp Arg Lys
65 70 75 80

Val Lys Ser Thr Ile Thr Leu Asp Gly Gly Ala Leu Val Gln Val Gln
85 90 95

Lys Trp Asp Gly Lys Thr Thr Thr Ile Asn Arg Lys Ile Val Asp Asp
100 105 110

Lys Leu Val Val Glu Cys Ile Met Lys Gly Val Thr Ala Thr Arg Ile
115 120 125

Tyr Glu Arg Ala
130

<210> 400
 <211> 124
 <212> PRT
 <213> Homo sapiens

<400> 400
 Phe Leu Gly Thr Trp Lys Leu Val Ser Ser Glu Asn Phe Glu Asp Tyr
 1 5 10 15
 Met Lys Glu Leu Gly Phe Ala Ala Arg Asn Met Ala Gly Leu Val Lys
 20 25 30
 Pro Thr Val Thr Ile Ser Val Asp Gly Lys Met Met Thr Ile Arg Thr
 35 40 45
 Glu Ser Ser Phe Gln Asp Thr Lys Ile Ser Phe Lys Leu Gly Glu Glu
 50 55 60
 Phe Asp Glu Thr Thr Ala Asp Asn Arg Lys Val Lys Ser Thr Ile Thr
 65 70 75 80
 Leu Glu Asn Gly Ser Met Ile His Val Gln Lys Trp Leu Gly Lys Glu
 85 90 95
 Thr Thr Ile Lys Arg Lys Ile Val Asp Glu Lys Met Val Val Glu Cys
 100 105 110
 Lys Met Asn Asn Ile Val Ser Thr Arg Ile Tyr Glu
 115 120

<210> 401
 <211> 127
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: lipocalin
 domain sequence

<400> 401
 Phe Ala Gly Lys Trp Tyr Leu Val Ala Ser Ala Asn Phe Asp Pro Glu
 1 5 10 15
 Leu Lys Glu Glu Leu Gly Val Leu Glu Ala Thr Arg Lys Glu Ile Thr
 20 25 30
 Pro Leu Lys Glu Gly Asn Leu Glu Ile Val Phe Asp Gly Asp Lys Asn

35	40	45
Gly Ile Cys Glu Glu Thr Phe Gly Lys Leu Glu Lys Thr Lys Lys Leu		
50	55	60
Gly Val Glu Phe Asp Tyr Tyr Thr Gly Asp Asn Arg Phe Val Val Leu		
65	70	75
80		
Asp Thr Asp Tyr Asp Asn Tyr Leu Leu Val Cys Val Gln Lys Gly Asp		
85	90	95
Gly Asn Glu Thr Ser Arg Thr Ala Glu Leu Tyr Gly Arg Thr Pro Glu		
100	105	110
115		
Leu Ser Pro Glu Ala Leu Glu Leu Phe Glu Thr Ala Thr Lys Glu		
115	120	125

<210> 402
 <211> 391
 <212> PRT
 <213> Homo sapiens

<400> 402
His Gln Ala Ala His Gln Pro Phe Pro Arg Pro Arg Phe Arg Gln Glu
1 5 10 15
Thr Gly His Pro Ser Leu Gln Arg Asp Phe Pro Arg Ser Phe Leu Leu
20 25 30
Asp Leu Pro Asn Phe Pro Asp Leu Ser Lys Ala Asp Ile Asn Gly Gln
35 40 45
Asn Pro Asn Ile Gln Val Thr Ile Glu Val Val Asp Gly Pro Asp Ser
50 55 60
Glu Ala Asp Lys Asp Gln His Pro Glu Asn Lys Pro Ser Trp Ser Val
65 70 75 80
Pro Ser Pro Asp Trp Arg Ala Trp Trp Gln Arg Ser Leu Ser Leu Ala
85 90 95
Arg Ala Asn Ser Gly Asp Gln Asp Tyr Lys Tyr Asp Ser Thr Ser Asp
100 105 110
Asp Ser Asn Phe Leu Asn Pro Pro Arg Gly Trp Asp His Thr Ala Pro
115 120 125

Gly His Arg Thr Phe Glu Thr Lys Asp Gln Pro Glu Tyr Asp Ser Thr
 130 135 140
 Asp Gly Glu Gly Asp Trp Ser Leu Trp Ser Val Cys Ser Val Thr Cys
 145 150 155 160
 Gly Asn Gly Asn Gln Lys Arg Thr Arg Ser Cys Gly Tyr Ala Cys Thr
 165 170 175
 Ala Thr Glu Ser Arg Thr Cys Asp Arg Pro Asn Cys Pro Gly Ile Glu
 180 185 190
 Asp Thr Phe Arg Thr Ala Ala Thr Glu Val Ser Leu Leu Ala Gly Ser
 195 200 205
 Glu Glu Phe Asn Ala Thr Lys Leu Phe Glu Val Asp Thr Asp Ser Cys
 210 215 220
 Glu Arg Trp Met Ser Cys Lys Ser Glu Phe Leu Lys Lys Tyr Met His
 225 230 235 240
 Lys Val Met Asn Asp Leu Pro Ser Cys Pro Cys Ser Tyr Pro Thr Glu
 245 250 255
 Val Ala Tyr Ser Thr Ala Asp Ile Phe Asp Arg Ile Lys Arg Lys Asp
 260 265 270
 Phe Arg Trp Lys Asp Ala Ser Gly Pro Lys Glu Lys Leu Glu Ile Tyr
 275 280 285
 Lys Pro Thr Ala Arg Tyr Cys Ile Arg Ser Met Leu Ser Leu Glu Ser
 290 295 300
 Thr Thr Leu Ala Ala Gln His Cys Cys Tyr Gly Asp Asn Met Gln Leu
 305 310 315 320
 Ile Thr Arg Gly Lys Gly Ala Gly Thr Pro Asn Leu Ile Ser Thr Glu
 325 330 335
 Phe Ser Ala Glu Leu His Tyr Lys Val Asp Val Leu Pro Trp Ile Ile
 340 345 350
 Cys Lys Gly Asp Trp Ser Arg Tyr Asn Glu Ala Arg Pro Pro Asn Asn
 355 360 365
 Gly Gln Lys Cys Thr Glu Ser Pro Ser Asp Glu Asp Tyr Ile Lys Gln
 370 375 380

Phe Gln Glu Ala Arg Glu Tyr
385 390

<210> 403

<211> 538

<212> PRT

<213> Homo sapiens

<400> 403

Val His Ser His Gly Asp Lys Asp Ser Gln Thr Cys Ile Arg Val Ser
1 5 10 15
Ala Ser Pro Asp Pro Arg Pro Leu Lys Glu Glu Glu Glu Ala Pro Leu
20 25 30
Leu Pro Arg Thr His Leu Gln Ala Glu Pro His Gln His Gly Cys Trp
35 40 45
Thr Val Thr Glu Pro Ala Ala Met Thr Pro Gly Asn Ala Thr Pro Pro
50 55 60
Arg Thr Pro Glu Val Thr Pro Leu Arg Leu Glu Leu Gln Lys Leu Pro
65 70 75 80
Gly Leu Ala Asn Thr Thr Leu Ser Thr Pro Asn Pro Asp Thr Gln Ala
85 90 95
Ser Ala Ser Pro Asp Pro Arg Pro Leu Arg Glu Glu Glu Glu Ala Arg
100 105 110
Leu Leu Pro Arg Thr His Leu Gln Ala Glu Leu His Gln His Gly Cys
115 120 125
Trp Thr Val Thr Glu Pro Ala Ala Leu Thr Pro Gly Asn Ala Thr Pro
130 135 140
Pro Arg Thr Gln Glu Val Thr Pro Leu Leu Leu Glu Leu Gln Lys Leu
145 150 155 160
Pro Glu Leu Val His Ala Thr Leu Ser Thr Pro Asn Pro Asp Asn Gln
165 170 175
Val Thr Ile Lys Val Val Glu Asp Pro Gln Ala Glu Val Ser Ile Asp
180 185 190
Leu Leu Ala Glu Pro Ser Asn Pro Pro Pro Gln Asp Thr Leu Ser Trp
195 200 205

Leu Pro Ala Leu Trp Ser Phe Leu Trp Gly Asp Tyr Lys Gly Glu Glu
 210 215 220

Lys Asp Arg Ala Pro Gly Glu Lys Gly Glu Glu Lys Glu Glu Asp Glu
 225 230 235 240

Asp Tyr Pro Ser Glu Asp Ile Glu Gly Glu Asp Gln Glu Asp Lys Glu
 245 250 255

Glu Asp Glu Glu Glu Gln Ala Leu Trp Phe Asn Gly Thr Thr Asp Asn
 260 265 270

Trp Asp Gln Gly Trp Leu Ala Pro Gly Asp Trp Val Phe Lys Asp Ser
 275 280 285

Val Ser Tyr Asp Tyr Glu Pro Gln Lys Glu Trp Ser Pro Trp Ser Pro
 290 295 300

Cys Ser Gly Asn Cys Ser Thr Gly Lys Gln Gln Arg Thr Arg Pro Cys
 305 310 315 320

Gly Tyr Gly Cys Thr Ala Thr Glu Thr Arg Thr Cys Asp Leu Pro Ser
 325 330 335

Cys Pro Gly Thr Glu Asp Lys Asp Thr Leu Gly Leu Pro Ser Glu Glu
 340 345 350

Trp Lys Leu Leu Ala Arg Asn Ala Thr Asp Met His Asp Gln Asp Val
 355 360 365

Asp Ser Cys Glu Lys Trp Leu Asn Cys Lys Ser Asp Phe Leu Ile Lys
 370 375 380

Tyr Leu Ser Gln Met Leu Arg Asp Leu Pro Ser Cys Pro Cys Ala Tyr
 385 390 395 400

Pro Leu Glu Ala Met Asp Ser Pro Val Ser Leu Gln Asp Glu His Gln
 405 410 415

Gly Arg Ser Phe Arg Trp Arg Asp Ala Ser Gly Pro Arg Glu Arg Leu
 420 425 430

Asp Ile Tyr Gln Pro Thr Ala Arg Phe Cys Leu Arg Ser Met Leu Ser
 435 440 445

Gly Glu Ser Ser Thr Leu Ala Ala Gln His Cys Cys Tyr Asp Glu Asp
 450 455 460

Ser Arg Leu Leu Thr Arg Gly Lys Gly Ala Gly Met Pro Asn Leu Ile
465 470 475 480

Ser Thr Asp Phe Ser Pro Lys Leu His Phe Lys Phe Asp Thr Thr Pro
485 490 495

Trp Ile Leu Cys Lys Gly Asp Trp Ser Arg Leu His Ala Val Leu Pro
500 505 510

Pro Asn Asn Gly Arg Ala Cys Thr Asp Asn Pro Leu Glu Glu Glu Tyr
515 520 525

Leu Ala Gln Leu Gln Glu Ala Lys Glu Tyr
530 535

<210> 404

<211> 151

<212> PRT

<213> Homo sapiens

<400> 404

Lys Val Met Asn Asp Leu Pro Ser Cys Pro Cys Ser Tyr Pro Thr Glu
1 5 10 15

Val Ala Tyr Ser Thr Ala Asp Ile Phe Asp Arg Ile Lys Arg Lys Asp
20 25 30

Phe Arg Trp Lys Asp Ala Ser Gly Pro Lys Glu Lys Leu Glu Ile Tyr
35 40 45

Lys Pro Thr Ala Arg Tyr Cys Ile Arg Ser Met Leu Ser Leu Glu Ser
50 55 60

Thr Thr Leu Ala Ala Gln His Cys Cys Tyr Gly Asp Asn Met Gln Leu
65 70 75 80

Ile Thr Arg Gly Lys Gly Ala Gly Thr Pro Asn Leu Ile Ser Thr Glu
85 90 95

Phe Ser Ala Glu Leu His Tyr Lys Val Asp Val Leu Pro Trp Ile Ile
100 105 110

Cys Lys Gly Asp Trp Ser Arg Tyr Asn Glu Ala Arg Pro Pro Asn Asn
115 120 125

Gly Gln Lys Cys Thr Glu Ser Pro Ser Asp Glu Asp Tyr Ile Lys Gln

130 135 140
 Phe Gln Glu Ala Arg Glu Tyr
 145 150

 <210> 405
 <211> 56
 <212> PRT
 <213> Homo sapiens

 <400> 405
 Val Gly Ser Asp Thr Thr Ser Glu Thr Ser Phe Ser Leu Ser Lys Glu
 1 5 10 15
 Ala Pro Arg Glu His Leu Asp His Gln Ala Ala His Gln Pro Phe Pro
 20 25 30
 Arg Pro Arg Phe Arg Gln Glu Thr Gly His Pro Ser Leu Gln Arg Asp
 35 40 45
 Phe Pro Arg Ser Phe Leu Leu Asp
 50 55

 <210> 406
 <211> 42
 <212> PRT
 <213> Homo sapiens

 <400> 406
 Gly Asp Trp Ser Leu Trp Ser Val Cys Ser Val Thr Cys Gly Asn Gly
 1 5 10 15
 Asn Gln Lys Arg Thr Arg Ser Cys Gly Tyr Ala Cys Thr Ala Thr Glu
 20 25 30
 Ser Arg Thr Cys Asp Arg Pro Asn Cys Pro
 35 40

 <210> 407
 <211> 50
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Thrombospondin

type 1 domain sequence

<400> 407

Gly Glu Trp Ser Glu Trp Ser Pro Cys Ser Val Thr Cys Gly Gly Gly
1 5 10 15

Val Gln Thr Arg Thr Arg Cys Cys Asn Pro Pro Pro Asn Gly Gly Gly
20 25 30

Pro Cys Thr Gly Pro Asp Thr Glu Thr Arg Ala Cys Asn Glu Gln Pro
35 40 45

Cys Pro
50

<210> 408

<211> 41

<212> PRT

<213> Homo sapiens

<400> 408

Gly Asp Trp Ser Leu Trp Ser Val Cys Ser Val Thr Cys Gly Asn Gly
1 5 10 15

Asn Gln Lys Arg Thr Arg Ser Cys Gly Tyr Ala Cys Thr Ala Thr Glu
20 25 30

Ser Arg Thr Cys Asp Arg Pro Asn Cys
35 40

<210> 409

<211> 48

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Thrombospondin
type 1 domain sequence

<400> 409

Ser Pro Trp Ser Glu Trp Ser Pro Cys Ser Val Thr Cys Gly Lys Gly
1 5 10 15

Ile Arg Thr Arg Gln Arg Thr Cys Asn Ser Pro Ala Gly Gly Lys Pro
20 25 30

Cys Thr Gly Asp Ala Gln Glu Thr Glu Ala Cys Met Met Asp Pro Cys
 35 40 45

<210> 410
 <211> 460
 <212> PRT
 <213> Homo sapiens

<400> 410
 Met Ala Gly Tyr Leu Ser Glu Ser Asp Phe Val Met Val Glu Glu Gly
 1 5 10 15
 Phe Ser Thr Arg Asp Leu Leu Lys Glu Leu Thr Leu Gly Ala Ser Gln
 20 25 30
 Ala Thr Thr Asp Glu Val Ala Ala Phe Phe Val Ala Asp Leu Gly Ala
 35 40 45
 Ile Val Arg Lys His Phe Cys Phe Leu Lys Cys Leu Pro Arg Val Arg
 50 55 60
 Pro Phe Tyr Ala Val Lys Cys Asn Ser Ser Pro Gly Val Leu Lys Val
 65 70 75 80
 Leu Ala Gln Leu Gly Leu Gly Phe Ser Cys Ala Asn Lys Ala Glu Met
 85 90 95
 Glu Leu Val Gln His Ile Gly Ile Pro Ala Ser Lys Ile Ile Cys Ala
 100 105 110
 Asn Pro Cys Lys Gln Ile Ala Gln Ile Lys Tyr Ala Ala Lys His Gly
 115 120 125
 Ile Gln Leu Leu Ser Phe Asp Asn Glu Met Glu Leu Ala Lys Val Val
 130 135 140
 Lys Ser His Pro Ser Ala Lys Met Val Leu Cys Ile Ala Thr Asp Asp
 145 150 155 160
 Ser His Ser Leu Ser Cys Leu Ser Leu Lys Phe Gly Val Ser Leu Lys
 165 170 175
 Ser Cys Arg His Leu Leu Glu Asn Ala Lys Lys His His Val Glu Val
 180 185 190

Val Gly Val Ser Phe His Ile Gly Ser Gly Cys Pro Asp Pro Gln Ala
 195 200 205
 Tyr Ala Gln Ser Ile Ala Asp Ala Arg Leu Val Phe Glu Met Gly Thr
 210 215 220
 Glu Leu Gly His Lys Met His Val Leu Asp Leu Gly Gly Gly Phe Pro
 225 230 235 240
 Gly Thr Glu Gly Ala Lys Val Arg Phe Glu Glu Ile Ala Ser Val Ile
 245 250 255
 Asn Ser Ala Leu Asp Leu Tyr Phe Pro Glu Gly Cys Gly Val Asp Ile
 260 265 270
 Phe Ala Glu Leu Gly Arg Tyr Tyr Val Thr Ser Ala Phe Thr Val Ala
 275 280 285
 Val Ser Ile Ile Ala Lys Lys Glu Val Leu Leu Asp Gln Pro Gly Arg
 290 295 300
 Glu Glu Glu Asn Gly Ser Thr Ser Lys Thr Ile Val Tyr His Leu Asp
 305 310 315 320
 Glu Gly Val Tyr Gly Ile Phe Asn Ser Val Leu Phe Asp Asn Ile Cys
 325 330 335
 Pro Thr Pro Ile Leu Gln Lys Lys Pro Ser Thr Glu Gln Pro Leu Tyr
 340 345 350
 Ser Ser Ser Leu Trp Gly Pro Ala Val Asp Gly Cys Asp Cys Val Ala
 355 360 365
 Glu Gly Leu Trp Leu Pro Gln Leu His Val Gly Asp Trp Leu Val Phe
 370 375 380
 Asp Asn Met Gly Ala Tyr Thr Val Gly Met Gly Ser Pro Phe Trp Gly
 385 390 395 400
 Thr Gln Ala Cys His Ile Thr Tyr Ala Met Ser Arg Val Ala Trp Glu
 405 410 415
 Ala Leu Arg Arg Gln Leu Met Ala Ala Glu Gln Glu Asp Asp Val Glu
 420 425 430
 Gly Val Cys Lys Pro Leu Ser Cys Gly Trp Glu Ile Thr Asp Thr Leu
 435 440 445

Cys Val Gly Pro Val Phe Thr Pro Ala Ser Ile Met
 450 455 460

<210> 411
 <211> 480
 <212> PRT
 <213> Homo sapiens

<400> 411
 Met Ala Gly Tyr Leu Ser Glu Ser Asp Phe Val Met Val Glu Glu Gly
 1 5 10 15
 Phe Ser Thr Arg Asp Leu Leu Lys Glu Leu Thr Leu Gly Ala Ser Gln
 20 25 30
 Ala Thr Thr Asp Glu Val Ala Ala Phe Phe Val Ala Asp Leu Gly Ala
 35 40 45
 Ile Val Arg Lys His Phe Cys Phe Leu Lys Cys Leu Pro Arg Val Arg
 50 55 60
 Pro Phe Tyr Ala Val Lys Cys Asn Ser Ser Pro Gly Val Leu Lys Val
 65 70 75 80
 Leu Ala Gln Leu Gly Leu Gly Phe Ser Cys Ala Asn Lys Ala Glu Met
 85 90 95
 Glu Leu Val Gln His Ile Gly Ile Pro Ala Ser Lys Ile Ile Cys Ala
 100 105 110
 Asn Pro Cys Lys Gln Ile Ala Gln Ile Lys Tyr Ala Ala Lys His Gly
 115 120 125
 Ile Gln Leu Leu Ser Phe Asp Asn Glu Met Glu Leu Ala Lys Val Val
 130 135 140
 Lys Ser His Pro Ser Ala Lys Met Val Leu Cys Ile Ala Thr Asp Asp
 145 150 155 160
 Ser His Ser Leu Ser Cys Leu Ser Leu Lys Phe Gly Val Ser Leu Lys
 165 170 175
 Ser Cys Arg His Leu Leu Glu Asn Ala Lys Lys His His Val Glu Val
 180 185 190
 Val Gly Val Ser Phe His Ile Gly Ser Gly Cys Pro Asp Pro Gln Ala

195	200	205
Tyr Ala Gln Ser Ile Ala Asp Ala Arg Leu Val Phe Glu Met Gly Thr		
210	215	220
Glu Leu Gly His Lys Met His Val Leu Asp Leu Gly Gly Gly Phe Pro		
225	230	235 240
Gly Thr Glu Gly Ala Lys Val Arg Phe Glu Glu Ile Ala Ser Val Ile		
	245	250 255
Asn Ser Ala Leu Asp Leu Tyr Phe Pro Glu Gly Cys Gly Val Asp Ile		
	260	265 270
Phe Ala Glu Leu Gly Arg Tyr Tyr Val Thr Ser Ala Phe Thr Val Ala		
	275	280 285
Val Ser Ile Ile Ala Lys Lys Glu Val Leu Leu Asp Gln Pro Gly Arg		
	290	295 300
Glu Ala Pro Leu Pro Pro Pro His Ile Ala Thr Cys Ala Ala Ser Glu		
305	310	315 320
Pro Ser Pro Pro Ala Glu Glu Asn Gly Ser Thr Ser Lys Thr Ile Val		
	325	330 335
Tyr His Leu Asp Glu Gly Val Tyr Gly Ile Phe Asn Ser Val Leu Phe		
	340	345 350
Asp Asn Ile Cys Pro Thr Pro Ile Leu Gln Lys Lys Pro Ser Thr Glu		
	355	360 365
Gln Pro Leu Tyr Ser Ser Ser Leu Trp Gly Pro Ala Val Asp Gly Cys		
	370	375 380
Asp Cys Val Ala Glu Gly Leu Trp Leu Pro Gln Leu His Val Gly Asp		
385	390	395 400
Trp Leu Val Phe Asp Asn Met Gly Ala Tyr Thr Val Gly Met Gly Ser		
	405	410 415
Pro Phe Trp Gly Thr Gln Ala Cys His Ile Thr Tyr Ala Met Ser Arg		
	420	425 430
Val Ala Trp Glu Ala Leu Arg Arg Gln Leu Met Ala Ala Glu Gln Glu		
	435	440 445
Asp Asp Val Glu Gly Val Cys Lys Pro Leu Ser Cys Gly Trp Glu Ile		

450

455

460

Thr Asp Thr Leu Cys Val Gly Pro Val Phe Thr Pro Ala Ser Ile Met
 465 470 475 480

<210> 412

<211> 365

<212> PRT

<213> Homo sapiens

<400> 412

Met Glu Leu Val Gln His Ile Gly Ile Pro Ala Ser Lys Ile Ile Cys
 1 5 10 15

Ala Asn Pro Cys Lys Gln Ile Ala Gln Ile Lys Tyr Ala Ala Lys His
 20 25 30

Gly Ile Gln Leu Leu Ser Phe Asp Asn Glu Met Glu Leu Ala Lys Val
 35 40 45

Val Lys Ser His Pro Ser Ala Lys Met Val Leu Cys Ile Ala Thr Asp
 50 55 60

Asp Ser His Ser Leu Ser Cys Leu Ser Leu Lys Phe Gly Val Ser Leu
 65 70 75 80

Lys Ser Cys Arg His Leu Leu Glu Asn Ala Lys Lys His His Val Glu
 85 90 95

Val Val Gly Val Ser Phe His Ile Gly Ser Gly Cys Pro Asp Pro Gln
 100 105 110

Ala Tyr Ala Gln Ser Ile Ala Asp Ala Arg Leu Val Phe Glu Met Gly
 115 120 125

Thr Glu Leu Gly His Lys Met His Val Leu Asp Leu Gly Gly Gly Phe
 130 135 140

Pro Gly Thr Glu Gly Ala Lys Val Arg Phe Glu Glu Ile Ala Ser Val
 145 150 155 160

Ile Asn Ser Ala Leu Asp Leu Tyr Phe Pro Glu Gly Cys Gly Val Asp
 165 170 175

Ile Phe Ala Glu Leu Gly Arg Tyr Tyr Val Thr Ser Ala Phe Thr Val
 180 185 190
 Ala Val Ser Ile Ile Ala Lys Lys Glu Val Leu Leu Asp Gln Pro Gly
 195 200 205
 Arg Glu Glu Glu Asn Gly Ser Thr Ser Lys Thr Ile Val Tyr His Leu
 210 215 220
 Asp Glu Gly Val Tyr Gly Ile Phe Asn Ser Val Leu Phe Asp Asn Ile
 225 230 235 240
 Cys Pro Thr Pro Ile Leu Gln Lys Lys Pro Ser Thr Glu Gln Pro Leu
 245 250 255
 Tyr Ser Ser Ser Leu Trp Gly Pro Ala Val Asp Gly Cys Asp Cys Val
 260 265 270
 Ala Glu Gly Leu Trp Leu Pro Gln Leu His Val Gly Asp Trp Leu Val
 275 280 285
 Phe Asp Asn Met Gly Ala Tyr Thr Val Gly Met Gly Ser Pro Phe Trp
 290 295 300
 Gly Thr Gln Ala Cys His Ile Thr Tyr Ala Met Ser Arg Val Ala Trp
 305 310 315 320
 Glu Ala Leu Arg Arg Gln Leu Met Ala Ala Glu Gln Glu Asp Asp Val
 325 330 335
 Glu Gly Val Cys Lys Pro Leu Ser Cys Gly Trp Glu Ile Thr Asp Thr
 340 345 350
 Leu Cys Val Gly Pro Val Phe Thr Pro Ala Ser Ile Met
 355 360 365

<210> 413

<211> 362

<212> PRT

<213> Homo sapiens

<400> 413

Met Ala Gly Tyr Leu Ser Glu Ser Asp Phe Val Met Val Glu Glu Gly
 1 5 10 15
 Phe Ser Thr Arg Asp Leu Leu Lys Glu Leu Thr Leu Gly Ala Ser Gln
 20 25 30

Ala Thr Thr Asp Glu Val Ala Ala Phe Phe Val Ala Asp Leu Gly Ala
 35 40 45
 Ile Val Arg Lys His Phe Cys Phe Leu Lys Cys Leu Pro Arg Val Arg
 50 55 60
 Pro Phe Tyr Ala Val Lys Cys Asn Ser Ser Pro Gly Val Leu Lys Val
 65 70 75 80
 Leu Ala Gln Leu Gly Leu Gly Phe Ser Cys Ala Asn Lys Ala Glu Met
 85 90 95
 Glu Leu Val Gln His Ile Gly Ile Pro Ala Ser Lys Ile Ile Cys Ala
 100 105 110
 Asn Pro Cys Lys Gln Ile Ala Gln Ile Lys Tyr Ala Ala Lys His Gly
 115 120 125
 Ile Gln Leu Leu Ser Phe Asp Asn Glu Met Glu Leu Ala Lys Val Val
 130 135 140
 Lys Ser His Pro Ser Ala Lys Met Val Leu Cys Ile Ala Thr Asp Asp
 145 150 155 160
 Ser His Ser Leu Ser Cys Leu Ser Leu Lys Phe Gly Val Ser Leu Lys
 165 170 175
 Ser Cys Arg His Leu Leu Glu Asn Ala Lys Lys His His Val Glu Val
 180 185 190
 Val Gly Val Ser Phe His Ile Gly Ser Gly Cys Pro Asp Pro Gln Ala
 195 200 205
 Tyr Ala Gln Ser Ile Ala Asp Ala Arg Leu Val Phe Glu Met Gly Thr
 210 215 220
 Glu Leu Gly His Lys Met His Val Leu Asp Leu Gly Gly Gly Phe Pro
 225 230 235 240
 Gly Thr Glu Gly Ala Lys Val Arg Phe Glu Glu Ile Ala Ser Val Ile
 245 250 255
 Asn Ser Ala Leu Asp Leu Tyr Phe Pro Glu Gly Cys Gly Val Asp Ile
 260 265 270
 Phe Ala Glu Leu Gly Arg Tyr Tyr Val Thr Ser Ala Phe Thr Val Ala
 275 280 285

Val Ser Ile Ile Ala Lys Lys Glu Val Leu Leu Asp Gln Pro Gly Arg
290 295 300

Glu Glu Glu Asn Gly Ser Thr Ser Lys Thr Ile Val Tyr His Leu Asp
305 310 315 320

Glu Gly Val Tyr Gly Ile Phe Asn Ser Val Leu Phe Asp Asn Ile Cys
325 330 335

Pro Thr Pro Ile Leu Gln Lys Ser Lys Asn His Ser Pro Cys Tyr Met
340 345 350

Ser Leu Glu Ser Ile His Phe Ile Ala Val
355 360

<210> 414

<211> 374

<212> PRT

<213> Homo sapiens

<400> 414

Met Ala Gly Tyr Leu Ser Glu Ser Asp Phe Val Met Val Glu Glu Gly
1 5 10 15

Phe Ser Thr Arg Asp Leu Leu Lys Glu Leu Thr Leu Gly Ala Ser Gln
20 25 30

Ala Thr Thr Asp Glu Val Ala Ala Phe Phe Val Ala Asp Leu Gly Ala
35 40 45

Ile Val Arg Lys His Phe Cys Phe Leu Lys Cys Leu Pro Arg Val Arg
50 55 60

Pro Phe Tyr Ala Val Lys Cys Asn Ser Ser Pro Gly Val Leu Lys Val
65 70 75 80

Leu Ala Gln Leu Gly Leu Gly Phe Ser Cys Ala Asn Lys Ala Glu Met
85 90 95

Glu Leu Val Gln His Ile Gly Ile Pro Ala Ser Lys Ile Ile Cys Ala
100 105 110

Asn Pro Cys Lys Gln Ile Ala Gln Ile Lys Tyr Ala Ala Lys His Gly
115 120 125

Ile Gln Leu Leu Ser Phe Asp Asn Glu Met Glu Leu Ala Lys Val Val

130
 Lys Ser His Pro Ser Ala Lys Phe Val Gln Gln Arg Gly Thr Ala Cys
 145 150 155 160

Leu Ile Arg Met Val Leu Cys Ile Ala Thr Asp Asp Ser His Ser Leu
 165 170 175

Ser Cys Leu Ser Leu Lys Phe Gly Val Ser Leu Lys Ser Cys Arg His
 180 185 190

Leu Leu Glu Asn Ala Lys Lys His His Val Glu Val Val Gly Val Ser
 195 200 205

Phe His Ile Gly Ser Gly Cys Pro Asp Pro Gln Ala Tyr Ala Gln Ser
 210 215 220

Ile Ala Asp Ala Arg Leu Val Phe Glu Met Gly Thr Glu Leu Gly His
 225 230 235 240

Lys Met His Val Leu Asp Leu Gly Gly Gly Phe Pro Gly Thr Glu Gly
 245 250 255

Ala Lys Val Arg Phe Glu Glu Ile Ala Ser Val Ile Asn Ser Ala Leu
 260 265 270

Asp Leu Tyr Phe Pro Glu Gly Cys Gly Val Asp Ile Phe Ala Glu Leu
 275 280 285

Gly Arg Tyr Tyr Val Thr Ser Ala Phe Thr Val Ala Val Ser Ile Ile
 290 295 300

Ala Lys Lys Glu Val Leu Leu Asp Gln Pro Gly Arg Glu Glu Glu Asn
 305 310 315 320

Gly Ser Thr Ser Lys Thr Ile Val Tyr His Leu Asp Glu Gly Val Tyr
 325 330 335

Gly Ile Phe Asn Ser Val Leu Phe Asp Asn Ile Cys Pro Thr Pro Ile
 340 345 350

Leu Gln Lys Ser Lys Asn His Ser Pro Cys Tyr Met Ser Leu Glu Ser
 355 360 365

Ile His Phe Ile Ala Val
 370

<210> 415
 <211> 237
 <212> PRT
 <213> Homo sapiens

<400> 415

Asp Leu Gly Ala Ile Val Arg Lys His Phe Cys Phe Leu Lys Cys Leu
 1 5 10 15

Pro Arg Val Arg Pro Phe Tyr Ala Val Lys Cys Asn Ser Ser Pro Gly
 20 25 30

Val Leu Lys Val Leu Ala Gln Leu Gly Leu Gly Phe Ser Cys Ala Asn
 35 40 45

Lys Ala Glu Met Glu Leu Val Gln His Ile Gly Ile Pro Ala Ser Lys
 50 55 60

Ile Ile Cys Ala Asn Pro Cys Lys Gln Ile Ala Gln Ile Lys Tyr Ala
 65 70 75 80

Ala Lys His Gly Ile Gln Leu Leu Ser Phe Asp Asn Glu Met Glu Leu
 85 90 95

Ala Lys Val Val Lys Ser His Pro Ser Ala Lys Met Val Leu Cys Ile
 100 105 110

Ala Thr Asp Asp Ser His Ser Leu Ser Cys Leu Ser Leu Lys Phe Gly
 115 120 125

Val Ser Leu Lys Ser Cys Arg His Leu Leu Glu Asn Ala Lys Lys His
 130 135 140

His Val Glu Val Val Gly Val Ser Phe His Ile Gly Ser Gly Cys Pro
 145 150 155 160

Asp Pro Gln Ala Tyr Ala Gln Ser Ile Ala Asp Ala Arg Leu Val Phe
 165 170 175

Glu Met Gly Thr Glu Leu Gly His Lys Met His Val Leu Asp Leu Gly
 180 185 190

Gly Gly Phe Pro Gly Thr Glu Gly Ala Lys Val Arg Phe Glu Glu Ile
 195 200 205

Ala Ser Val Ile Asn Ser Ala Leu Asp Leu Tyr Phe Pro Glu Gly Cys
 210 215 220

Gly Val Asp Ile Phe Ala Glu Leu Gly Arg Tyr Tyr Val
 225 230 235

<210> 416
 <211> 244
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:
 Pyridoxal-dependent decarboxylase domain sequence

<400> 416
 Asp Leu Gly Leu Ile Val Arg Arg Ile His Ala Leu Trp Gln Ala Phe
 1 5 10 15
 Leu Pro Arg Ile Gln Pro Phe Tyr Ala Val Lys Ala Asn Ser Asp Pro
 20 25 30
 Ala Val Leu Arg Leu Leu Ala Glu Leu Gly Thr Gly Phe Asp Cys Ala
 35 40 45
 Ser Lys Gly Glu Leu Glu Arg Val Leu Ala Ala Gly Val Pro Pro Glu
 50 55 60
 Arg Ile Ile Phe Ala Asn Pro Cys Lys Asp Arg Ser Glu Leu Arg Tyr
 65 70 75 80
 Ala Leu Glu His Gly Val Val Cys Val Thr Val Asp Asn Val Glu Glu
 85 90 95
 Leu Glu Lys Leu Ala Arg Leu Ala Pro Glu Ala Arg Leu Leu Leu Arg
 100 105 110
 Val Lys Pro Asp Val Asp Ala His Ala His Cys Tyr Leu Ser Thr Gly
 115 120 125
 Gln Asp Ser Lys Phe Gly Ala Asp Leu Glu Glu Ala Glu Ala Leu Leu
 130 135 140
 Lys Ala Ala Lys Glu Leu Gly Leu Asn Val Val Gly Val His Phe His
 145 150 155 160
 Val Gly Ser Gly Cys Thr Asp Ala Glu Ala Phe Val Lys Ala Ala Arg
 165 170 175
 Asp Ala Arg Asn Val Phe Asp Gln Gly Ala Asp Glu Leu Gly Phe Glu

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:

Pyridoxal-dependent decarboxylase domain sequence

<400> 418

Thr Leu Val Ser Asn Val Ile Ala Lys Lys Thr Val Pro Ser Asp Asp
1 5 10 15

Glu Asp Gly Lys Asp Asp Thr Arg Met Tyr Tyr Val Asn Asp Gly Gly
20 25 30

Tyr Ser Ser Phe Ile Arg Pro Leu Leu Tyr His Ala His Pro His Ala
35 40 45

Leu Leu Leu Arg Arg Ser Leu Asp Glu Glu Pro Pro Arg Lys Ser Ser
50 55 60

Ile Trp Gly Pro Thr Cys Asp Ser Leu Asp Lys Ile Ile Lys Asp Arg
65 70 75 80

Leu Leu Pro Glu Leu Asp Val Gly Asp Trp Leu Ala Phe Phe Asp Thr
85 90 95

Gly Ala Tyr Thr Glu Ala Met Ala Ser Asn Phe
100 105

<210> 419

<211> 467

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:

Pyridoxal-dependent decarboxylase domain sequence

<400> 419

Phe Tyr Val Tyr Asp Leu Gly Leu His Ile Val Arg Arg Ile His Ala
1 5 10 15

Leu Trp Lys Ala Phe Leu Pro Arg Gly Gln Tyr Asn Ser Val Val Lys
20 25 30

Pro Phe Tyr Ala Val Lys Ala Asn Ser Asp Pro Ala Val Leu Arg Leu
35 40 45

Leu Ala Glu Leu Gly Thr His Ser Leu Gly Phe Asp Cys Ala Ser Lys
 50 55 60
 Gly Glu Leu Glu Arg Val Leu Ala Ala Tyr Leu Ala Gly Val Ser Pro
 65 70 75 80
 Glu Arg Ile Ile Phe Ala Asn Pro Cys Lys Ser Arg Ser Glu Leu Arg
 85 90 95
 Tyr Ala Leu Glu His Arg Lys Met Gly Gly Val Val Cys Val Thr Val
 100 105 110
 Asp Asn Val Glu Glu Leu Glu Lys Ile Ala Lys Leu Ala Pro Glu Ala
 115 120 125
 Gly Val Lys Pro Arg Leu Leu Leu Arg Val Lys Pro Asp Val Asp Ala
 130 135 140
 His Ala His Cys Arg Leu Ser Thr Gly Gln Glu Asp Ser Lys Phe Gly
 145 150 155 160
 Ala Asp Leu Glu Asp Gly Glu Asp Ala Glu Ala Leu Leu Lys Ala Ala
 165 170 175
 Lys Glu Leu Gly Asn Leu Asn Val Val Gly Val His Phe His Val Gly
 180 185 190
 Ser Gly Ile Ser Asp Leu Glu Ala Phe Val Lys Ala Val Arg Asp Ala
 195 200 205
 Arg Asn Val Phe Asp Gln Gly Ala Asp Glu Leu Gly Phe Lys Thr Ile
 210 215 220
 Asp Leu Lys Ile Leu Asp Ile Gly Gly Gly Phe Gly Val Asp Tyr Thr
 225 230 235 240
 Gly Thr Arg Ser Gln Ser Asp Met Ser Val Ala Glu Asp Phe Glu Glu
 245 250 255
 Ile Ala Glu Val Ile Asn Ala Ala Leu Glu Glu Leu Phe Pro His Ala
 260 265 270
 Gly Tyr Gly Asp Pro Gly Pro Thr Ile Ile Ala Glu Pro Gly Arg Tyr
 275 280 285
 Ile Val Ala Ala Ala Gly Thr Leu Val Ser Asn Val Ile Ala Lys Lys
 290 295 300

Glu Val Pro Ser Asp Asp Ala Asp Thr Thr Ser Asp Ser Leu Arg Glu
 305 310 315 320
 Glu Ser Lys Asp Asp Thr Arg Met Tyr Tyr Val Asn Asp Gly Gly Tyr
 325 330 335
 Gly Ser Phe Ile Arg Pro Leu Leu Tyr His Ala His Pro Glu Ala Leu
 340 345 350
 Leu Leu Arg Arg Gly Gly Glu Val Gln Tyr Gln Asp Ala Glu Thr Glu
 355 360 365
 Arg Ala Ala Asp Lys Ser Leu Ser Asn Phe Ser Leu Phe Gln Ser Tyr
 370 375 380
 Pro Asp Ala Trp Gly Ile Asp Gln Leu Phe Pro Val Leu Pro Leu Arg
 385 390 395 400
 Ser Leu Asp Glu Glu Pro Lys Arg Lys Ser Ser Ile Val Gly Pro Thr
 405 410 415
 Cys Asp Ser Asp Gly Lys Leu Asp Lys Ile Ile Lys Asp Asp Gly Ile
 420 425 430
 Ala Glu Asp Arg Leu Leu Pro Glu Leu Lys Pro Val Gly Asp Trp Leu
 435 440 445
 Ala Phe Pro Asp Thr Gly Ala Tyr Thr Tyr Ala Met Ala Ser Asn Tyr
 450 455 460
 Asn Gly Phe
 465

<210> 420

<211> 361

<212> PRT

<213> Homo sapiens

<400> 420

Phe Phe Val Ala Asp Leu Gly Ala Ile Val Arg Lys His Phe Cys Phe
 1 5 10 15

Leu Lys Cys Leu Pro Arg Val Arg Pro Phe Tyr Ala Val Lys Cys Asn
 20 25 30

Ser Ser Pro Gly Val Leu Lys Val Leu Ala Gln Leu Gly Leu Gly Phe

35	40	45
Ser Cys Ala Asn Lys Ala Glu Met Glu Leu Val Gln His Ile Gly Ile		
50	55	60
Pro Ala Ser Lys Ile Ile Cys Ala Asn Pro Cys Lys Gln Ile Ala Gln		
65	70	75
Ile Lys Tyr Ala Ala Lys His Gly Ile Gln Leu Leu Ser Phe Asp Asn		
	85	90
		95
Glu Met Glu Leu Ala Lys Val Val Lys Ser His Pro Ser Ala Lys Met		
	100	105
		110
Val Leu Cys Ile Ala Thr Asp Asp Ser His Ser Leu Ser Cys Leu Ser		
	115	120
		125
Leu Lys Phe Gly Val Ser Leu Lys Ser Cys Arg His Leu Leu Glu Asn		
	130	135
		140
Ala Lys Lys His His Val Glu Val Val Gly Val Ser Phe His Ile Gly		
145	150	155
		160
Ser Gly Cys Pro Asp Pro Gln Ala Tyr Ala Gln Ser Ile Ala Asp Ala		
	165	170
		175
Arg Leu Val Phe Glu Met Gly Thr Glu Leu Gly His Lys Met His Val		
	180	185
		190
Leu Asp Leu Gly Gly Gly Phe Pro Gly Thr Glu Gly Ala Lys Val Arg		
	195	200
		205
Phe Glu Glu Ile Ala Ser Val Ile Asn Ser Ala Leu Asp Leu Tyr Phe		
	210	215
		220
Pro Glu Gly Cys Gly Val Asp Ile Phe Ala Glu Leu Gly Arg Tyr Tyr		
225	230	235
		240
Val Thr Ser Ala Phe Thr Val Ala Val Ser Ile Ile Ala Lys Lys Glu		
	245	250
		255
Val Leu Leu Asp Gln Pro Gly Arg Glu Glu Glu Asn Gly Ser Thr Ser		
	260	265
		270
Lys Thr Ile Val Tyr His Leu Asp Glu Gly Val Tyr Gly Ile Phe Asn		
	275	280
		285
Ser Val Leu Phe Asp Asn Ile Cys Pro Thr Pro Ile Leu Gln Lys Lys		

Tyr	Ser	Pro	Gln	Ser	Ser	Leu	Lys	Gln	Pro	Gln	Val	Val	Arg	Leu	Gln	145	150	155	160
Ala	Ser	Glu	Lys	Glu	Ser	Ser	Phe	Gly	Ser	His	Leu	Ser	Leu	Glu	Asp	165	170	175	
Leu	Tyr	Leu	Cys	Met	Pro	Gln	Pro	Asp	Ala	Ala	Gly	Asp	Arg	Leu	Ser	180	185	190	
Leu	Gln	Ser	Lys	Gly	Gln	Leu	His	Ser	Ser	Pro	Ile	Gly	Ser	Glu	Ser	195	200	205	
His	Leu	Gly	Ala	Leu	Thr	Pro	Ala	Glu	Pro	Ser	Ala	Phe	Gln	Glu	Pro	210	215	220	
Glu	Val	Leu	Gly	Glu	Arg	Pro	Lys	His	Lys	Thr	Thr	Thr	Leu	Arg	Met	225	230	235	240
Asp	Ser	Ser	Arg	Leu	Pro	Arg	His	Trp	Val	Arg	Pro	Val	Ala	Glu	Val	245	250	255	
Leu	Ile	Pro	Asp	Leu	Glu	Val	His	Pro	Leu	Glu	Ile	Tyr	Arg	Gly	Arg	260	265	270	
Pro	Arg	Arg	Ser	Gln	Ala	Gly	Thr	Ala	Thr	Ser	Ala	Cys	Glu	Ser	Gln	275	280	285	
Ala	Leu	Ser	Ser	Arg	Ala	Pro	Ser	Lys	Pro	His	Val	Ser	Ser	Pro	Arg	290	295	300	
Phe	Pro	Leu	Gln	Arg	Cys	Ala	Thr	Phe	Arg	Ala	Leu	Gly	Pro	Asp	Pro	305	310	315	320
Ser	Leu	Asn	Leu	Ala	Gln	Thr	Ser	Pro	Ser	Phe	Gly	Ser	Asn	Val	Pro	325	330	335	
Phe	Leu	Ser	Pro	Gly	Phe	Arg	Phe	Leu	Pro	Arg	Asn	Pro	Ile	Pro	Pro	340	345	350	
Asp	Val	Ala	Ser	Thr	Pro	Thr	Pro	Lys	Leu	Trp	Pro	Leu	Ala	Lys	Trp	355	360	365	
Pro	Ser	Gly	Trp	Glu	Arg	Glu	Ala	Glu	Gln	Leu	Gly	Glu	Leu	Trp	Ala	370	375	380	
Gly	Arg	Thr	Arg	Val	Pro	Pro	Gln	Gly	Gln	Glu	Pro	Val	Glu	Val	Thr	385	390	395	400

Pro Leu Glu Glu Asp Ser Gly Trp Pro Leu Ala Ala Pro Gln Val Leu
 405 410 415
 Glu Ala Thr Ser Gln Val Leu Trp Lys Pro Met Val Ile Ser Glu Thr
 420 425 430
 Met Lys Leu Val Pro Gly Val Ser Met Trp Asn Arg Gly Thr Gln Glu
 435 440 445
 Leu Leu Asn Pro Ala Val Ile Arg Lys Glu Ala Glu Glu Gly Thr Pro
 450 455 460
 Gln Ala Pro Glu Gln Gln Pro Ile Gln Thr Gly Val Ser Lys Pro
 465 470 475

 <210> 422
 <211> 300
 <212> PRT
 <213> Mus musculus

 <400> 422
 Met Gly Leu Val Leu Arg Lys Met Leu Ser Ser Gly Val Cys Thr Ser
 1 5 10 15
 Asn Val Gln Leu Pro Gly Lys Val Ala Ile Val Thr Gly Ala Asn Thr
 20 25 30
 Gly Ile Gly Lys Glu Thr Ala Lys Asp Leu Ala Gln Arg Gly Ala Arg
 35 40 45
 Val Tyr Leu Ala Cys Arg Asp Val Asp Lys Gly Glu Leu Ala Ala Arg
 50 55 60
 Glu Ile Gln Ala Val Thr Gly Asn Ser Gln Val Phe Val Arg Lys Leu
 65 70 75 80
 Asp Leu Ala Asp Thr Lys Ser Ile Arg Ala Phe Ala Lys Asp Phe Leu
 85 90 95
 Ala Glu Glu Lys His Leu His Leu Leu Ile Asn Asn Ala Gly Val Met
 100 105 110
 Met Cys Pro Tyr Ser Lys Thr Ala Asp Gly Phe Glu Met His Ile Gly
 115 120 125
 Val Asn His Leu Gly His Phe Leu Leu Thr His Leu Leu Leu Glu Lys
 130 135 140

Leu Lys Glu Ser Ala Pro Ser Arg Ile Val Asn Leu Ser Ser Leu Gly
 145 150 155 160
 His His Leu Gly Arg Ile His Phe His Asn Leu Gln Gly Glu Lys Phe
 165 170 175
 Tyr Ser Ala Gly Leu Ala Tyr Cys His Ser Lys Leu Ala Asn Ile Leu
 180 185 190
 Phe Thr Lys Glu Leu Ala Lys Arg Leu Lys Gly Ser Gly Val Thr Thr
 195 200 205
 Tyr Ser Val His Pro Gly Thr Val His Ser Glu Leu Thr Arg Tyr Ser
 210 215 220
 Ser Ile Met Arg Trp Leu Trp Gln Leu Phe Phe Val Phe Ile Lys Thr
 225 230 235 240
 Pro Gln Glu Gly Ala Gln Thr Ser Leu Tyr Cys Ala Leu Thr Glu Gly
 245 250 255
 Leu Glu Ser Leu Ser Gly Ser His Phe Ser Asp Cys Gln Leu Ala Trp
 260 265 270
 Val Ser Tyr Gln Gly Arg Asn Glu Ile Ile Ala Arg Arg Leu Trp Asp
 275 280 285
 Val Ser Cys Asp Leu Leu Gly Leu Pro Val Asp Trp
 290 295 300

 <210> 423
 <211> 293
 <212> PRT
 <213> Mus musculus

 <400> 423
 Met Leu Ser Ser Gly Val Cys Thr Ser Asn Val Gln Leu Pro Gly Lys
 1 5 10 15
 Val Ala Ile Val Thr Gly Ala Asn Thr Gly Ile Gly Lys Glu Thr Ala
 20 25 30
 Lys Asp Leu Ala Gln Arg Gly Ala Arg Val Tyr Leu Ala Cys Arg Asp
 35 40 45
 Val Asp Lys Gly Glu Leu Ala Ala Arg Glu Ile Gln Ala Val Thr Gly

50	55	60
Asn Ser Gln Val Phe Val Arg Lys Leu Asp Leu Ala Asp Thr Lys Ser		
65	70	75 80
Ile Arg Ala Phe Ala Lys Asp Phe Leu Ala Glu Glu Lys His Leu His		
	85	90 95
Leu Leu Ile Asn Asn Ala Gly Val Met Met Cys Pro Tyr Ser Lys Thr		
	100	105 110
Ala Asp Gly Phe Glu Met His Ile Gly Val Asn His Leu Gly His Phe		
	115	120 125
Leu Leu Thr His Leu Leu Leu Glu Lys Leu Lys Glu Ser Ala Pro Ser		
	130	135 140
Arg Ile Val Asn Leu Ser Ser Leu Gly His His Leu Gly Arg Ile His		
	145	150 155 160
Phe His Asn Leu Gln Gly Glu Lys Phe Tyr Ser Ala Gly Leu Ala Tyr		
	165	170 175
Cys His Ser Lys Leu Ala Asn Ile Leu Phe Thr Lys Glu Leu Ala Lys		
	180	185 190
Arg Leu Lys Gly Ser Gly Val Thr Thr Tyr Ser Val His Pro Gly Thr		
	195	200 205
Val His Ser Glu Leu Thr Arg Tyr Ser Ser Ile Met Arg Trp Leu Trp		
	210	215 220
Gln Leu Phe Phe Val Phe Ile Lys Thr Pro Gln Glu Gly Ala Gln Thr		
	225	230 235 240
Ser Leu Tyr Cys Ala Leu Thr Glu Gly Leu Glu Ser Leu Ser Gly Ser		
	245	250 255
His Phe Ser Asp Cys Gln Leu Ala Trp Val Ser Tyr Gln Gly Arg Asn		
	260	265 270
Glu Ile Ile Ala Arg Arg Leu Trp Asp Val Ser Cys Asp Leu Leu Gly		
	275	280 285
Leu Pro Val Asp Trp		
290		

<210> 424
 <211> 316
 <212> PRT
 <213> Mus musculus

<400> 424
 Met Phe Gly Phe Leu Leu Leu Leu Ser Leu Pro Phe Ile Leu Tyr Leu
 1 5 10 15
 Val Thr Pro Lys Ile Arg Lys Met Leu Ser Ser Gly Val Cys Thr Ser
 20 25 30
 Asn Val Gln Leu Pro Gly Lys Val Ala Ile Val Thr Gly Ala Asn Thr
 35 40 45
 Gly Ile Gly Lys Glu Thr Ala Lys Asp Leu Ala Gln Arg Gly Ala Arg
 50 55 60
 Val Tyr Leu Ala Cys Arg Asp Val Asp Lys Gly Glu Leu Ala Ala Arg
 65 70 75 80
 Glu Ile Gln Ala Val Thr Gly Asn Ser Gln Val Phe Val Arg Lys Leu
 85 90 95
 Asp Leu Ala Asp Thr Lys Ser Ile Arg Ala Phe Ala Lys Asp Phe Leu
 100 105 110
 Ala Glu Glu Lys His Leu His Leu Leu Ile Asn Asn Ala Gly Val Met
 115 120 125
 Met Cys Pro Tyr Ser Lys Thr Ala Asp Gly Phe Glu Met His Ile Gly
 130 135 140
 Val Asn His Leu Gly His Phe Leu Leu Thr His Leu Leu Leu Glu Lys
 145 150 155 160
 Leu Lys Glu Ser Ala Pro Ser Arg Ile Val Asn Leu Ser Ser Leu Gly
 165 170 175
 His His Leu Gly Arg Ile His Phe His Asn Leu Gln Gly Glu Lys Phe
 180 185 190
 Tyr Ser Ala Gly Leu Ala Tyr Cys His Ser Lys Leu Ala Asn Ile Leu
 195 200 205
 Phe Thr Lys Glu Leu Ala Lys Arg Leu Lys Gly Ser Gly Val Thr Thr
 210 215 220

Tyr Ser Val His Pro Gly Thr Val His Ser Glu Leu Thr Arg Tyr Ser
225 230 235 240

Ser Ile Met Arg Trp Leu Trp Gln Leu Phe Phe Val Phe Ile Lys Thr
245 250 255

Pro Gln Glu Gly Ala Gln Thr Ser Leu Tyr Cys Ala Leu Thr Glu Gly
260 265 270

Leu Glu Ser Leu Ser Gly Ser His Phe Ser Asp Cys Gln Leu Ala Trp
275 280 285

Val Ser Tyr Gln Gly Arg Asn Glu Ile Ile Ala Arg Arg Leu Trp Asp
290 295 300

Val Ser Cys Asp Leu Leu Gly Leu Pro Val Asp Trp
305 310 315

<210> 425

<211> 353

<212> PRT

<213> Mus musculus

<400> 425

Met Phe Gly Phe Leu Leu Leu Ser Leu Pro Phe Ile Leu Tyr Leu
1 5 10 15

Val Thr Pro Lys Ile Arg Lys Met Leu Ser Ser Gly Val Cys Thr Ser
20 25 30

Asn Val Gln Leu Pro Gly Lys Val Ala Ile Val Thr Gly Ala Asn Thr
35 40 45

Gly Ile Gly Lys Glu Thr Ala Lys Asp Leu Ala Gln Arg Gly Ala Arg
50 55 60

Val Tyr Leu Ala Cys Arg Asp Val Asp Lys Gly Glu Leu Ala Ala Arg
65 70 75 80

Glu Ile Gln Ala Val Thr Gly Asn Ser Gln Val Phe Val Arg Lys Leu
85 90 95

Asp Leu Ala Asp Thr Lys Ser Ile Arg Ala Phe Ala Lys Asp Phe Leu
100 105 110

Ala Glu Glu Lys His Leu His Leu Leu Ile Asn Asn Ala Gly Val Met
115 120 125

Met Cys Pro Tyr Ser Lys Thr Ala Asp Gly Phe Glu Met His Ile Gly
 130 135 140
 Val Asn His Leu Gly His Phe Leu Leu Thr His Leu Leu Leu Glu Lys
 145 150 155 160
 Leu Lys Glu Ser Ala Pro Ser Arg Ile Val Asn Leu Ser Ser Leu Gly
 165 170 175
 His His Leu Gly Arg Ile His Phe His Asn Leu Gln Gly Glu Lys Phe
 180 185 190
 Tyr Ser Ala Gly Leu Ala Tyr Cys His Ser Lys Leu Ala Asn Ile Leu
 195 200 205
 Phe Thr Lys Glu Leu Ala Lys Arg Leu Lys Gly Ser Gly Val Thr Thr
 210 215 220
 Tyr Ser Val His Pro Gly Thr Val His Ser Glu Leu Thr Gly Tyr Ser
 225 230 235 240
 Ser Ile Met Arg Trp Leu Trp Gln Leu Phe Phe Val Phe Ile Lys Thr
 245 250 255
 Pro Gln Glu Gly Ala Gln Thr Ser Leu Tyr Cys Ala Leu Thr Glu Gly
 260 265 270
 Leu Glu Ser Leu Ser Gly Arg His Phe Ser Asp Cys Gln Leu Ala Trp
 275 280 285
 Val Ser Tyr Gln Gly Arg Asn Glu Ile Ile Ala Arg Arg Leu Trp Asp
 290 295 300
 Val Ser Cys Asp Leu Leu Ala Ser Gln Trp Ile Gly Lys Trp Trp Phe
 305 310 315 320
 Gly Pro Lys Arg Arg Leu Glu Glu Met Met Ile Ile Leu Gln Ser Gly
 325 330 335
 Gln Asn Leu Glu Pro Glu Glu Arg Arg Thr Ser Ser Leu Ser Cys Leu
 340 345 350
 Ala

<210> 426

<211> 127
<212> PRT
<213> Homo sapiens

<400> 426

Thr Gly Lys Ile Ala Ile Val Thr Gly Ala Asn Ser Gly Ile Gly Lys
1 5 10 15
Val Val Ser Gln Asp Leu Ala Arg Cys Gly Ala Gln Val Ile Leu Thr
20 25 30
Cys Gln Ser Arg Glu Cys Gly Gln Gln Ala Leu Ala Glu Ile Gln Ala
35 40 45
Ala Ser Asn Ser Asn Arg Leu Leu Leu Gly Glu Val Asp Leu Ser Ser
50 55 60
Met Thr Ser Ile Arg Ser Phe Ala Arg Arg Leu Leu Gln Glu Asn Pro
65 70 75 80
Glu Ile His Leu Leu Val Asn Asn Ala Gly Val Ser Gly Phe Arg Arg
85 90 95
His Leu Pro Gln Gly Ala Trp Ile Ser Pro Leu Ser Leu Thr Met Leu
100 105 110
Gly Pro Phe Cys Ser Gln Ile Tyr Ser Lys Asp Leu Lys Gln Gly
115 120 125

<210> 427
<211> 128
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: short chain
dehydrogenase domain sequence

<400> 427

Thr Gly Lys Val Ala Leu Val Thr Gly Ala Ser Ser Gly Ile Gly Leu
1 5 10 15
Ala Ile Ala Lys Arg Leu Ala Glu Glu Gly Ala Lys Val Val Val Val
20 25 30
Asp Arg Arg Glu Glu Lys Ala Glu Ala Ala Ala Glu Leu Lys Ala Glu
35 40 45

Leu Gly Asp Arg Ala Leu Phe Ile Gln Leu Asp Val Thr Asp Glu Glu
50 55 60

Ser Ile Lys Ala Ala Val Ala Gln Ala Val Glu Glu Leu Gly Arg Leu
65 70 75 80

Asp Val Leu Val Asn Asn Ala Gly Ile Leu Gly Pro Gly Glu Pro Phe
85 90 95

Glu Leu Ser Glu Asp Asp Trp Glu Arg Val Ile Asp Val Asn Leu Thr
100 105 110

Gly Val Phe Leu Leu Thr Gln Ala Val Leu Pro His Met Leu Lys Arg
115 120 125

<210> 428

<211> 158

<212> PRT

<213> Homo sapiens

<400> 428

Met Glu Val Met Asp Val Phe Ser Thr Asp Asp Leu Thr Gly Phe Leu
1 5 10 15

Gln Thr Lys Ala Gln Gln Gly Trp Leu Val Ala Gly Thr Val Gly Cys
20 25 30

Pro Ser Thr Glu Asp Pro Gln Ser Ser Glu Ile Pro Ile Met Ser Cys
35 40 45

Leu Glu Phe Leu Trp Glu Arg Pro Thr Leu Leu Val Leu Gly Asn Glu
50 55 60

Gly Ser Gly Leu Ser Gln Glu Val Gln Ala Ser Cys Gln Leu Leu Leu
65 70 75 80

Thr Ile Leu Pro Arg Arg Gln Leu Pro Pro Gly Leu Glu Ser Leu Asn
85 90 95

Val Ser Val Ala Ala Gly Ile Leu Leu His Ser Ile Cys Ser Gln Arg
100 105 110

Lys Gly Phe Pro Thr Glu Gly Glu Arg Arg Gln Leu Leu Gln Asp Pro

115	120	125
Gln Glu Pro Ser Ala Arg Ser Glu Gly Leu Ser Met Ala Gln His Pro		
130	135	140
Gly Leu Ser Ser Gly Pro Glu Lys Glu Arg Gln Asn Glu Gly		
145	150	155
<210> 429		
<211> 155		
<212> PRT		
<213> Homo sapiens		
<400> 429		
Met Asp Val Phe Ser Thr Asp Asp Leu Thr Gly Phe Leu Gln Thr Lys		
1	5	10 15
Ala Gln Gln Gly Trp Leu Val Ala Gly Thr Val Gly Cys Pro Ser Thr		
20	25	30
Glu Asp Pro Gln Ser Ser Glu Ile Pro Ile Met Ser Cys Leu Glu Phe		
35	40	45
Leu Trp Glu Arg Pro Thr Leu Leu Val Leu Gly Asn Glu Gly Ser Gly		
50	55	60
Leu Ser Gln Glu Val Gln Ala Ser Cys Gln Leu Leu Leu Thr Ile Leu		
65	70	75 80
Pro Arg Arg Gln Leu Pro Pro Gly Leu Glu Ser Leu Asn Val Ser Val		
85	90	95
Ala Ala Gly Ile Leu Leu His Ser Ile Cys Ser Gln Arg Lys Gly Phe		
100	105	110
Pro Thr Glu Gly Glu Arg Arg Gln Leu Leu Gln Asp Pro Gln Glu Pro		
115	120	125
Ser Ala Arg Ser Glu Gly Leu Ser Met Ala Gln His Pro Gly Leu Ser		
130	135	140
Ser Gly Pro Glu Lys Glu Arg Gln Asn Glu Gly		
145	150	155

<210> 430
 <211> 124

<212> PRT

<213> Homo sapiens

<400> 430

Met Asp Val Phe Ala Thr Pro Asp Leu Pro Gly Phe Leu Gln Ala Lys
1 5 10 15
Ala Gln Gln Gly Trp Leu Val Val Gly Thr Val Gly Cys Pro Gly Pro
20 25 30
Glu Ile Ser Gln Ser Ser Lys Val Pro Ile Thr Ser Cys Leu Glu Phe
35 40 45
Val Trp Asp Arg Pro Thr Leu Leu Val Leu Gly Ser Glu Gly Ser Gly
50 55 60
Leu Ser Gln Glu Val Phe Ala Ser Cys Gln Leu Leu Leu Thr Ile Leu
65 70 75 80
Pro Arg Arg His Leu Pro Pro Gly Leu Glu Ser Leu Asn Val Ser Val
85 90 95
Ala Thr Gly Ile Leu Leu His Ser Ile Cys Ser Gln Lys Lys Gly Phe
100 105 110
Pro Val Gln Glu Arg Gly Gln Leu Leu Gln Asp Ser
115 120

<210> 431

<211> 181

<212> PRT

<213> Homo sapiens

<400> 431

Met Phe Ser Ala Ile Arg Ser Gln His Ser Gly Val Asp Ile Cys Ile
1 5 10 15
Asn Asn Ala Gly Leu Ala Arg Pro Asp Thr Leu Leu Ser Gly Ser Thr
20 25 30
Ser Gly Trp Lys Asp Met Phe Asn Val Asn Val Leu Ala Leu Ser Ile
35 40 45
Cys Thr Arg Glu Ala Tyr Gln Ser Met Lys Glu Arg Asn Val Asp Asp
50 55 60
Gly His Ile Ile Asn Ile Asn Ser Met Ser Gly His Arg Val Leu Pro

65		70		75		80
Leu Ser Val Thr His Phe Tyr Ser Ala Thr Lys Tyr Ala Val Thr Ala						
	85		90		95	
Leu Thr Glu Gly Leu Arg Gln Glu Leu Arg Glu Ala Gln Thr His Ile						
	100		105		110	
Arg Ala Thr Cys Ile Ser Pro Gly Val Val Glu Thr Gln Phe Ala Phe						
	115		120		125	
Lys Leu His Asp Lys Asp Pro Glu Lys Ala Ala Ala Thr Tyr Glu Gln						
	130		135		140	
Met Lys Cys Leu Lys Pro Glu Asp Val Ala Glu Ala Val Ile Tyr Val						
145		150		155		160
Leu Ser Thr Pro Ala His Ile Gln Ile Gly Asp Ile Gln Met Arg Pro						
	165		170		175	
Thr Glu Gln Val Thr						
	180					

<210> 432

<211> 181

<212> PRT

<213> Mus musculus

<400> 432

Met Ser Ser Ala Ile Arg Ser Gln His Ser Gly Val Asp Ile Cys Ile														
1		5				10						15		
Asn Asn Ala Gly Leu Ala Arg Pro Asp Thr Leu Leu Ser Gly Ser Thr														
	20					25						30		
Ser Gly Trp Lys Asp Met Phe Asn Val Asn Val Leu Ala Leu Ser Ile														
	35					40						45		
Cys Thr Arg Glu Ala Tyr Gln Ser Met Lys Glu Arg Asn Val Asp Asp														
	50					55						60		
Gly His Ile Ile Asn Ile Asn Ser Met Ser Gly His Arg Val Leu Pro														
65				70				75					80	
Leu Ser Val Thr His Phe Tyr Ser Ala Thr Lys Tyr Ala Val Thr Ala														
	85							90					95	

Leu Thr Glu Gly Leu Arg Gln Glu Leu Arg Glu Ala Gln Thr His Ile
100 105 110

Arg Ala Thr Cys Ile Ser Pro Gly Val Val Glu Thr Gln Phe Ala Phe
115 120 125

Lys Leu His Asp Lys Asp Pro Glu Lys Ala Ala Ala Thr Tyr Glu Gln
130 135 140

Met Lys Cys Leu Lys Pro Glu Asp Val Ala Glu Ala Val Ile Tyr Val
145 150 155 160

Leu Ser Thr Pro Ala His Ile Gln Ile Gly Asp Ile Gln Met Arg Pro
165 170 175

Thr Glu Gln Val Thr
180

<210> 433

<211> 182

<212> PRT

<213> Homo sapiens

<400> 433

Asp Arg Leu Ala Leu Val Thr Gly Ala Ser Gly Gly Ile Gly Ala Ala
1 5 10 15

Val Ala Arg Ala Leu Val Gln Gln Gly Leu Lys Val Val Gly Cys Ala
20 25 30

Arg Thr Val Gly Asn Ile Glu Glu Leu Ala Ala Glu Cys Lys Ser Ala
35 40 45

Gly Tyr Pro Gly Thr Leu Ile Pro Tyr Arg Cys Asp Leu Ser Asn Glu
50 55 60

Glu Asp Ile Leu Ser Met Phe Ser Ala Ile Arg Ser Gln His Ser Gly
65 70 75 80

Val Asp Ile Cys Ile Asn Asn Ala Gly Leu Ala Arg Pro Asp Thr Leu
85 90 95

Leu Ser Gly Ser Thr Ser Gly Trp Lys Asp Met Phe Asn Val Asn Val
100 105 110

Leu Ala Leu Ser Ile Cys Thr Arg Glu Ala Tyr Gln Ser Met Lys Glu
115 120 125

Arg Asn Val Asp Asp Gly His Ile Ile Asn Ile Asn Ser Met Ser Gly
 130 135 140

His Arg Val Leu Pro Leu Ser Val Thr His Phe Tyr Ser Ala Thr Lys
 145 150 155 160

Tyr Ala Val Thr Ala Leu Thr Glu Gly Leu Arg Gln Glu Leu Arg Glu
 165 170 175

Ala Gln Thr His Ile Arg
 180

<210> 434

<211> 174

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: short chain
 dehydrogenase domain sequence

<400> 434

Gly Lys Val Ala Leu Val Thr Gly Ala Ser Ser Gly Ile Gly Leu Ala
 1 5 10 15

Ile Ala Lys Arg Leu Ala Glu Glu Gly Ala Lys Val Val Val Val Asp
 20 25 30

Arg Arg Glu Glu Lys Ala Glu Ala Ala Ala Glu Leu Lys Ala Glu Leu
 35 40 45

Gly Asp Arg Ala Leu Phe Ile Gln Leu Asp Val Thr Asp Glu Glu Ser
 50 55 60

Ile Lys Ala Ala Val Ala Gln Ala Val Glu Glu Leu Gly Arg Leu Asp
 65 70 75 80

Val Leu Val Asn Asn Ala Gly Ile Leu Gly Pro Gly Glu Pro Phe Glu
 85 90 95

Leu Ser Glu Asp Asp Trp Glu Arg Val Ile Asp Val Asn Leu Thr Gly
 100 105 110

Val Phe Leu Leu Thr Gln Ala Val Leu Pro His Met Leu Lys Arg Ser
 115 120 125

Gly Gly Arg Ile Val Asn Ile Ser Ser Val Ala Gly Leu Val Pro Ser
 130 135 140

Pro Gly Leu Ser Ala Tyr Ser Ala Ser Lys Ala Ala Val Val Gly Phe
 145 150 155 160

Thr Arg Ser Leu Ala Leu Glu Leu Ala Pro His Gly Ile Arg
 165 170

<210> 435

<211> 115

<212> PRT

<213> Homo sapiens

<400> 435

Leu Val Leu Asp Gly Ile Gln Asp Pro Arg Asn Phe Gly Ala Val Leu
 1 5 10 15

Arg Ser Ala His Phe Leu Gly Val Asp Lys Thr Lys Ala Gln Gln Gly
 20 25 30

Trp Leu Val Ala Gly Thr Val Gly Cys Pro Ser Thr Glu Asp Pro Gln
 35 40 45

Ser Ser Glu Ile Pro Ile Met Ser Cys Leu Glu Phe Leu Trp Glu Arg
 50 55 60

Pro Thr Leu Leu Val Leu Gly Asn Glu Gly Ser Gly Leu Ser Gln Glu
 65 70 75 80

Val Gln Ala Ser Cys Gln Leu Leu Leu Thr Ile Leu Pro Arg Arg Gln
 85 90 95

Leu Pro Pro Gly Leu Glu Ser Leu Asn Val Ser Val Ala Ala Gly Ile
 100 105 110

Leu Leu His
 115

<210> 436

<211> 140

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SpoU rRNA

Methylase family domain sequence

<400> 436

Val Val Leu Asp Glu Val Glu Ile Pro His Asn Ile Gly Ala Ile Ile
1 5 10 15

Arg Thr Cys Ala Ala Leu Gly Val Asp Gly Ile Val Ile Val Asp Asp
20 25 30

Gly Phe Ala Leu Leu Asp Arg Arg Leu Arg Arg Ala Ser Leu Gly Tyr
35 40 45

Ala Glu Ser Val Pro Val Ile Arg Val Asp Asn Leu Glu Glu Phe Leu
50 55 60

Ala His Leu Lys Glu Ser Gly Ile Trp Leu Leu Thr Thr Ser Gly Asp
65 70 75 80

Gly Asn Ala Asp Pro Leu Asp Tyr Glu Asp Gly Ala Lys Arg Leu Ala
85 90 95

Leu Val Phe Gly Ser Glu Thr Thr Gly Leu Ser Asn Leu Ala Leu Glu
100 105 110

Pro Ala Asp Gln Arg Ile Arg Ile Pro Met Asn Gly Asp Val Arg Ser
115 120 125

Leu Asn Val Ser Val Ala Val Gly Leu Leu Leu Tyr
130 135 140

<210> 437

<211> 159

<212> PRT

<213> Homo sapiens

<400> 437

Leu Val Thr Gly Ala Ser Gly Gly Ile Gly Ala Ala Val Ala Arg Ala
1 5 10 15

Leu Val Gln Gln Gly Leu Lys Val Val Gly Cys Ala Arg Thr Val Gly
20 25 30

Asn Ile Glu Glu Leu Ala Ala Glu Cys Lys Ser Ala Gly Tyr Pro Gly
35 40 45

Thr Leu Ile Pro Tyr Arg Cys Asp Leu Ser Asn Glu Glu Asp Ile Leu
50 55 60

Ser Met Phe Ser Ala Ile Arg Ser Gln His Ser Gly Val Asp Ile Cys
65 70 75 80

Ile Asn Asn Ala Gly Leu Ala Arg Pro Asp Thr Leu Leu Ser Gly Ser
85 90 95

Thr Ser Gly Trp Lys Asp Met Phe Asn Val Asn Val Leu Ala Leu Ser
100 105 110

Ile Cys Thr Arg Glu Ala Tyr Gln Ser Met Lys Glu Arg Asn Val Asp
115 120 125

Asp Gly His Ile Ile Asn Ile Asn Ser Met Ser Gly His Arg Val Leu
130 135 140

Pro Leu Ser Val Thr His Phe Tyr Ser Ala Thr Lys Tyr Ala Val
145 150 155

<210> 438

<211> 152

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: NAD dependent
epimerase/dehydratase family domain sequence

<400> 438

Leu Val Thr Gly Gly Ala Gly Phe Ile Gly Ser His Leu Val Arg Glu
1 5 10 15

Leu Leu Asn Asn Gly Asp Asp Lys Val Val Val Leu Asp Asn Leu Thr
20 25 30

Tyr Ala Gly Asn Glu Ala Arg Leu Arg Val Ile Glu Gly Gly Pro Arg
35 40 45

Tyr Thr Phe Val Lys Gly Asp Ile Cys Asp Arg Asp Leu Leu Asp Lys
50 55 60

Val Phe Ala Glu Asn Gln Pro Asp Ala Val Ile His Phe Ala Ala Glu
65 70 75 80

Ser His Val Asp Arg Ser Ile Glu Lys Pro Leu Ala Tyr Ile Asp Thr
85 90 95

Asn Val Val Gly Thr Leu Thr Leu Leu Glu Ala Ala Arg Lys Ala Gly
100 105 110

Val Phe Lys Phe Val Phe Ser Ser Thr Asp Glu Val Tyr Gly Asp Leu
115 120 125

Pro Ser Ile Pro Ile Thr Glu Asp Thr Pro Tyr Gly Pro Ser Ser Pro
130 135 140

Tyr Gly Ala Ser Lys Ala Ser Ser
145 150

<210> 439

<211> 796

<212> PRT

<213> Homo sapiens

<400> 439

Met Glu Ala Gly Gly Glu Arg Phe Leu Arg Gln Arg Gln Val Leu Leu
1 5 10 15

Leu Phe Val Phe Leu Gly Gly Ser Leu Ala Gly Ser Glu Ser Arg Arg
20 25 30

Tyr Ser Val Ala Glu Glu Lys Glu Lys Gly Phe Leu Ile Ala Asn Leu
35 40 45

Ala Lys Asp Leu Gly Leu Arg Val Glu Glu Leu Ala Ala Arg Gly Ala
50 55 60

Gln Val Val Ser Lys Gly Asn Lys Gln His Phe Gln Leu Ser His Gln
65 70 75 80

Thr Gly Asp Leu Leu Leu Asn Glu Lys Leu Asp Arg Glu Glu Leu Cys
85 90 95

Gly Pro Thr Glu Pro Cys Ile Leu His Phe Gln Ile Leu Leu Gln Asn
100 105 110

Pro Leu Gln Phe Val Thr Asn Glu Leu Arg Ile Ile Asp Val Asn Asp
115 120 125

His Ser Pro Val Phe Phe Glu Asn Glu Met His Leu Lys Ile Leu Glu
130 135 140

Ser Thr Leu Pro Gly Thr Val Ile Pro Leu Gly Asn Ala Glu Asp Leu
145 150 155 160

Tyr Asn Ile Thr Ile Thr Ile Thr Asp Leu Gly Thr Pro Arg Leu Lys		
420	425	430
Thr Lys Tyr Asn Ile Thr Val Leu Val Ser Asp Val Asn Asp Asn Ala		
435	440	445
Pro Ala Phe Thr Gln Ile Ser Tyr Thr Leu Phe Val Arg Glu Asn Asn		
450	455	460
Ser Pro Ala Leu His Ile Gly Ser Val Ser Ala Thr Asp Arg Asp Ser		
465	470	475 480
Gly Thr Asn Ala Gln Val Thr Tyr Ser Leu Leu Pro Pro Gln Asp Pro		
485	490	495
His Leu Pro Leu Ser Ser Leu Val Ser Ile Asn Ala Asp Asn Gly His		
500	505	510
Leu Phe Ala Leu Arg Ser Leu Asp Tyr Glu Ala Leu Gln Ala Phe Glu		
515	520	525
Phe Arg Val Gly Ala Thr Asp Arg Gly Ser Pro Ala Leu Ser Ser Glu		
530	535	540
Ala Leu Val Arg Val Leu Val Leu Asp Ala Asn Asp Asn Ser Pro Phe		
545	550	555 560
Val Leu Tyr Pro Leu Gln Asn Gly Ser Ala Pro Cys Thr Glu Leu Val		
565	570	575
Pro Arg Ala Ala Glu Pro Gly Tyr Leu Val Thr Lys Val Val Ala Val		
580	585	590
Asp Gly Asp Ser Gly Gln Asn Ala Trp Leu Ser Tyr Gln Leu Leu Lys		
595	600	605
Ala Thr Glu Pro Gly Leu Phe Gly Val Trp Ala His Asn Gly Glu Val		
610	615	620
Arg Thr Ala Arg Leu Leu Ser Glu Arg Asp Ala Ala Lys His Arg Leu		
625	630	635 640
Val Val Leu Val Lys Asp Asn Gly Glu Pro Pro Arg Ser Ala Thr Ala		
645	650	655
Thr Leu His Val Leu Leu Val Asp Gly Phe Ser Gln Pro Tyr Leu Pro		
660	665	670

Leu Pro Glu Ala Ala Pro Ala Gln Ala Gln Ala Asp Leu Leu Thr Val
675 680 685

Tyr Leu Val Val Ala Leu Ala Ser Val Ser Ser Leu Phe Leu Phe Ser
690 695 700

Val Leu Leu Phe Val Ala Val Arg Leu Cys Arg Arg Ser Arg Ala Ala
705 710 715 720

Ser Val Gly Arg Cys Ser Val Pro Glu Gly Pro Phe Pro Gly Gln Met
725 730 735

Val Asp Val Ser Gly Thr Gly Thr Leu Ser Gln Ser Tyr Gln Tyr Glu
740 745 750

Val Cys Leu Thr Gly Gly Ser Gly Thr Asn Glu Phe Lys Phe Leu Lys
755 760 765

Pro Ile Ile Pro Asn Phe Val Ala Gln Gly Ala Glu Arg Val Ser Glu
770 775 780

Ala Asn Pro Ser Phe Arg Lys Ser Phe Glu Phe Ser
785 790 795

<210> 440

<211> 798

<212> PRT

<213> Homo sapiens

<400> 440

Met Glu Ala Gly Glu Gly Lys Glu Arg Val Pro Lys Gln Arg Gln Val
1 5 10 15

Leu Ile Phe Phe Val Leu Leu Gly Ile Ala Gln Ala Ser Cys Gln Pro
20 25 30

Arg His Tyr Ser Val Ala Glu Glu Thr Glu Ser Gly Ser Phe Val Ala
35 40 45

Asn Leu Leu Lys Asp Leu Gly Leu Glu Ile Gly Glu Leu Ala Val Arg
50 55 60

Gly Ala Arg Val Val Ser Lys Gly Lys Lys Met His Leu Gln Phe Asp
65 70 75 80

Arg Gln Thr Gly Asp Leu Leu Leu Asn Glu Lys Leu Asp Arg Glu Glu

	85		90		95
Leu Cys Gly Pro Thr Glu Pro Cys Val Leu Pro Phe Gln Val Leu Leu	100		105		110
Glu Asn Pro Leu Gln Phe Phe Gln Ala Glu Leu Arg Ile Arg Asp Val	115		120		125
Asn Asp His Ser Pro Val Phe Leu Asp Lys Glu Ile Leu Leu Lys Ile	130		135		140
Pro Glu Ser Ile Thr Pro Gly Thr Thr Phe Leu Ile Glu Arg Ala Gln	145		150		155
					160
Asp Leu Asp Val Gly Thr Asn Ser Leu Gln Asn Tyr Thr Ile Ser Pro	165		170		175
Asn Phe His Phe His Leu Asn Leu Gln Asp Ser Leu Asp Gly Ile Ile	180		185		190
Leu Pro Gln Leu Val Leu Asn Arg Ala Leu Asp Arg Glu Glu Gln Pro	195		200		205
Glu Ile Arg Leu Thr Leu Thr Ala Leu Asp Gly Gly Ser Pro Pro Arg	210		215		220
Ser Gly Thr Ala Leu Val Arg Ile Glu Val Val Asp Ile Asn Asp Asn	225		230		235
					240
Val Pro Glu Phe Ala Lys Leu Leu Tyr Glu Val Gln Ile Pro Glu Asp	245		250		255
Ser Pro Val Gly Ser Gln Val Ala Ile Val Ser Ala Arg Asp Leu Asp	260		265		270
Ile Gly Thr Asn Gly Glu Ile Ser Tyr Ala Phe Ser Gln Ala Ser Glu	275		280		285
Asp Ile Arg Lys Thr Phe Arg Leu Ser Ala Lys Ser Gly Glu Leu Leu	290		295		300
Leu Arg Gln Lys Leu Asp Phe Glu Ser Ile Gln Thr Tyr Thr Val Asn	305		310		315
					320
Ile Gln Ala Thr Asp Gly Gly Gly Leu Ser Gly Thr Cys Val Val Phe	325		330		335
Val Gln Val Met Asp Leu Asn Asp Asn Pro Pro Glu Leu Thr Met Ser					

340	345	350
Thr Leu Ile Asn Gln Ile Pro Glu Asn Leu Gln Asp Thr Leu Ile Ala		
355	360	365
Val Phe Ser Val Ser Asp Pro Asp Ser Gly Asp Asn Gly Arg Met Val		
370	375	380
Cys Ser Ile Gln Asp Asp Leu Pro Phe Phe Leu Lys Pro Ser Val Glu		
385	390	395 400
Asn Phe Tyr Thr Leu Val Ile Ser Thr Ala Leu Asp Arg Glu Thr Arg		
405	410	415
Ser Glu Tyr Asn Ile Thr Ile Thr Val Thr Asp Phe Gly Thr Pro Arg		
420	425	430
Leu Lys Thr Glu His Asn Ile Thr Val Leu Val Ser Asp Val Asn Asp		
435	440	445
Asn Ala Pro Ala Phe Thr Gln Thr Ser Tyr Thr Leu Phe Val Arg Glu		
450	455	460
Asn Asn Ser Pro Ala Leu His Ile Gly Ser Val Ser Ala Thr Asp Arg		
465	470	475 480
Asp Ser Gly Thr Asn Ala Gln Val Thr Tyr Ser Leu Leu Pro Pro Gln		
485	490	495
Asp Pro His Leu Pro Leu Ala Ser Leu Val Ser Ile Asn Ala Asp Asn		
500	505	510
Gly His Leu Phe Ala Leu Gln Ser Leu Asp Tyr Glu Ala Leu Gln Ala		
515	520	525
Phe Glu Phe Arg Val Gly Ala Ala Asp Arg Gly Ser Pro Ala Leu Ser		
530	535	540
Ser Glu Ala Leu Val Arg Val Leu Val Leu Asp Ala Asn Asp Asn Ser		
545	550	555 560
Pro Phe Val Leu Tyr Pro Leu Gln Asn Gly Ser Ala Pro Cys Thr Glu		
565	570	575
Leu Val Pro Arg Ala Ala Glu Pro Gly Tyr Leu Val Thr Lys Val Val		
580	585	590
Ala Val Asp Gly Asp Ser Gly Gln Asn Ala Trp Leu Ser Tyr Gln Leu		

Phe Phe Val Leu Leu Ser Leu Ser Gly Ala Gly Ala Glu Leu Gly Ser
20 25 30
Tyr Ser Val Val Glu Glu Thr Glu Arg Gly Ser Phe Val Ala Asn Leu
35 40 45
Gly Lys Asp Leu Gly Leu Gly Leu Thr Glu Met Ser Thr Arg Lys Ala
50 55 60
Arg Ile Ile Ser Gln Gly Asn Lys Gln His Leu Gln Leu Lys Ala Gln
65 70 75 80
Thr Gly Asp Leu Leu Ile Asn Glu Lys Leu Asp Arg Glu Glu Leu Cys
85 90 95
Gly Pro Thr Glu Pro Cys Ile Leu His Phe Gln Val Leu Met Glu Asn
100 105 110
Pro Leu Glu Ile Phe Gln Ala Glu Leu Arg Val Ile Asp Ile Asn Asp
115 120 125
His Ser Pro Met Phe Thr Glu Lys Glu Met Ile Leu Lys Ile Pro Glu
130 135 140
Asn Ser Pro Leu Gly Thr Glu Phe Pro Leu Asn His Ala Leu Asp Leu
145 150 155 160
Asp Val Gly Ser Asn Asn Val Gln Asn Tyr Lys Ile Ser Pro Ser Ser
165 170 175
His Phe Arg Val Leu Ile His Glu Phe Arg Asp Gly Arg Lys Tyr Pro
180 185 190
Glu Leu Val Leu Asp Lys Glu Leu Asp Arg Glu Glu Glu Pro Gln Leu
195 200 205
Arg Leu Thr Leu Thr Ala Leu Asp Gly Gly Ser Pro Pro Arg Ser Gly
210 215 220
Thr Ala Gln Val Arg Ile Glu Val Val Asp Ile Asn Asp Asn Ala Pro
225 230 235 240
Glu Phe Glu Gln Pro Ile Tyr Lys Val Gln Ile Pro Glu Asn Ser Pro
245 250 255
Leu Gly Ser Leu Val Ala Thr Val Ser Ala Arg Asp Leu Asp Gly Gly
260 265 270

Ala Asn Gly Lys Ile Ser Tyr Thr Leu Phe Gln Pro Ser Glu Asp Ile
 275 280 285

Ser Lys Thr Leu Glu Val Asn Pro Met Thr Gly Glu Val Arg Leu Arg
 290 295 300

Lys Gln Val Asp Phe Glu Met Val Thr Ser Tyr Glu Val Arg Ile Lys
 305 310 315 320

Ala Thr Asp Gly Gly Gly Leu Ser Gly Lys Cys Thr Leu Leu Leu Gln
 325 330 335

Val Val Asp Val Asn Asp Asn Pro Pro Gln Val Thr Met Ser Ala Leu
 340 345 350

Thr Ser Pro Ile Pro Glu Asn Ser Pro Glu Ile Val Val Ala Val Phe
 355 360 365

Ser Val Ser Asp Pro Asp Ser Gly Asn Asn Gly Lys Thr Ile Ser Ser
 370 375 380

Ile Gln Glu Asp Leu Pro Phe Leu Leu Lys Pro Ser Val Lys Asn Phe
 385 390 395 400

Tyr Thr Leu Val Thr Glu Arg Ala Leu Asp Arg Glu Ala Arg Ala Glu
 405 410 415

Tyr Asn Ile Thr Leu Thr Val Thr Asp Met Gly Thr Pro Arg Leu Lys
 420 425 430

Thr Glu His Asn Ile Thr Val Gln Ile Ser Asp Val Asn Asp Asn Ala
 435 440 445

Pro Thr Phe Thr Gln Thr Ser Tyr Thr Leu Phe Val Arg Glu Asn Asn
 450 455 460

Ser Pro Ala Leu His Ile Gly Ser Val Ser Ala Thr Asp Arg Asp Ser
 465 470 475 480

Gly Thr Asn Ala Gln Val Thr Tyr Ser Leu Leu Pro Pro Gln Asp Pro
 485 490 495

His Leu Pro Leu Ala Ser Leu Val Ser Ile Asn Ala Asp Asn Gly His
 500 505 510

Leu Phe Ala Leu Arg Ser Leu Asp Tyr Glu Ala Leu Gln Ala Phe Glu
 515 520 525

Phe Arg Val Gly Ala Thr Asp Arg Gly Ser Pro Ala Leu Ser Arg Glu
530 535 540

Ala Leu Val Arg Val Leu Val Leu Asp Ala Asn Asp Asn Ser Pro Phe
545 550 555 560

Val Leu Tyr Pro Leu Gln Asn Gly Ser Ala Pro Cys Thr Glu Leu Val
565 570 575

Pro Arg Ala Ala Glu Pro Gly Tyr Leu Val Thr Lys Val Val Ala Val
580 585 590

Asp Gly Asp Ser Gly Gln Asn Ala Trp Leu Ser Tyr Gln Leu Leu Lys
595 600 605

Ala Thr Glu Pro Gly Leu Phe Gly Val Trp Ala His Asn Gly Glu Val
610 615 620

Arg Thr Ala Arg Leu Leu Ser Glu Arg Asp Ala Ala Lys Gln Arg Leu
625 630 635 640

Val Val Leu Val Lys Asp Asn Gly Glu Pro Pro Arg Ser Ala Thr Ala
645 650 655

Thr Leu His Val Leu Leu Val Asp Gly Phe Ser Gln Pro Phe Leu Pro
660 665 670

Leu Pro Glu Ala Ala Pro Gly Gln Thr Gln Ala Asn Ser Leu Thr Val
675 680 685

Tyr Leu Val Val Ala Leu Ala Ser Val Ser Ser Leu Phe Leu Phe Ser
690 695 700

Val Leu Leu Phe Val Ala Val Arg Leu Cys Arg Arg Ser Arg Ala Ala
705 710 715 720

Ser Val Gly Arg Cys Ser Met Pro Glu Gly Pro Phe Pro Gly Arg Leu
725 730 735

Val Asp Val Ser Gly Thr Gly Thr Leu Ser Gln Ser Tyr Gln Tyr Glu
740 745 750

Val Cys Leu Thr Gly Gly Ser Glu Thr Ser Glu Phe Lys Phe Leu Lys
755 760 765

Pro Ile Ile Pro Asn Phe Ser Pro
770 775

<210> 442

<211> 776

<212> PRT

<213> Homo sapiens

<400> 442

Met Glu Ile Gly Trp Met His Asn Arg Arg Gln Arg Gln Val Leu Val
1 5 10 15

Phe Phe Val Leu Leu Ser Leu Ser Gly Ala Gly Ala Glu Leu Gly Ser
20 25 30

Tyr Ser Val Val Glu Glu Thr Glu Arg Gly Ser Phe Val Ala Asn Leu
35 40 45

Gly Lys Asp Leu Gly Leu Gly Leu Thr Glu Met Ser Thr Arg Lys Ala
50 55 60

Arg Ile Ile Ser Gln Gly Asn Lys Gln His Leu Gln Leu Lys Ala Gln
65 70 75 80

Thr Gly Asp Leu Leu Ile Asn Glu Lys Leu Asp Arg Glu Glu Leu Cys
85 90 95

Gly Pro Thr Glu Pro Cys Ile Leu His Phe Gln Val Leu Met Glu Asn
100 105 110

Pro Leu Glu Ile Phe Gln Ala Glu Leu Arg Val Ile Asp Ile Asn Asp
115 120 125

His Ser Pro Met Phe Thr Glu Lys Glu Met Ile Leu Lys Ile Pro Glu
130 135 140

Asn Ser Pro Leu Gly Thr Glu Phe Pro Leu Asn His Ala Leu Asp Leu
145 150 155 160

Asp Val Gly Ser Asn Asn Val Gln Asn Tyr Lys Ile Ser Pro Ser Ser
165 170 175

His Phe Arg Val Leu Ile His Glu Phe Arg Asp Gly Arg Lys Tyr Pro
180 185 190

Glu Leu Val Leu Asp Lys Glu Leu Asp Arg Glu Glu Glu Pro Gln Leu
195 200 205

Arg Leu Thr Leu Thr Ala Leu Asp Gly Gly Ser Pro Pro Arg Ser Gly
210 215 220

Thr	Ala	Gln	Val	Arg	Ile	Glu	Val	Val	Asp	Ile	Asn	Asp	Asn	Ala	Pro	225	230	235	240
Glu	Phe	Glu	Gln	Pro	Ile	Tyr	Lys	Val	Gln	Ile	Pro	Glu	Asn	Ser	Pro	245	250	255	
Leu	Gly	Ser	Leu	Val	Ala	Thr	Val	Ser	Ala	Arg	Asp	Leu	Asp	Gly	Gly	260	265	270	
Ala	Asn	Gly	Lys	Ile	Ser	Tyr	Thr	Leu	Phe	Gln	Pro	Ser	Glu	Asp	Ile	275	280	285	
Ser	Lys	Thr	Leu	Glu	Val	Asn	Pro	Met	Thr	Gly	Glu	Val	Arg	Leu	Arg	290	295	300	
Lys	Gln	Val	Asp	Phe	Glu	Met	Val	Thr	Ser	Tyr	Glu	Val	Arg	Ile	Lys	305	310	315	320
Ala	Thr	Asp	Gly	Gly	Gly	Leu	Ser	Gly	Lys	Cys	Thr	Leu	Leu	Leu	Gln	325	330	335	
Val	Val	Asp	Val	Asn	Asp	Asn	Pro	Pro	Gln	Val	Thr	Met	Ser	Ala	Leu	340	345	350	
Thr	Ser	Pro	Ile	Pro	Glu	Asn	Ser	Pro	Glu	Ile	Val	Val	Ala	Val	Phe	355	360	365	
Ser	Val	Ser	Asp	Pro	Asp	Ser	Gly	Asn	Asn	Gly	Lys	Thr	Ile	Ser	Ser	370	375	380	
Ile	Gln	Glu	Asp	Leu	Pro	Phe	Leu	Leu	Lys	Pro	Ser	Val	Lys	Asn	Phe	385	390	395	400
Tyr	Thr	Leu	Val	Thr	Glu	Arg	Ala	Leu	Asp	Arg	Glu	Ala	Arg	Ala	Glu	405	410	415	
Tyr	Asn	Ile	Thr	Leu	Thr	Val	Thr	Asp	Met	Gly	Thr	Pro	Arg	Leu	Lys	420	425	430	
Thr	Glu	His	Asn	Ile	Thr	Val	Gln	Ile	Ser	Asp	Val	Asn	Asp	Asn	Ala	435	440	445	
Pro	Thr	Phe	Thr	Gln	Thr	Ser	Tyr	Thr	Leu	Phe	Val	Arg	Glu	Asn	Asn	450	455	460	
Ser	Pro	Ala	Leu	His	Ile	Gly	Ser	Val	Ser	Ala	Thr	Asp	Arg	Asp	Ser	465	470	475	480

Gly Thr Asn Ala Gln Val Thr Tyr Ser Leu Leu Pro Pro Gln Asp Pro	485	490	495
His Leu Pro Leu Ala Ser Leu Val Ser Ile Asn Ala Asp Asn Gly His	500	505	510
Leu Phe Ala Leu Arg Ser Leu Asp Tyr Glu Ala Leu Arg Glu Phe Glu	515	520	525
Phe Arg Val Ser Ala Thr Asp Arg Gly Ser Pro Ala Leu Ser Ser Glu	530	535	540
Ala Leu Val Arg Val Leu Val Leu Asp Ala Asn Asp Asn Ser Pro Phe	545	550	555
Val Leu Tyr Pro Leu Gln Asn Gly Ser Ala Pro Cys Thr Glu Leu Val	565	570	575
Pro Arg Ala Ala Glu Pro Gly Tyr Leu Val Thr Lys Val Val Ala Val	580	585	590
Asp Gly Asp Ser Gly Gln Asn Ala Trp Leu Ser Tyr Gln Leu Leu Lys	595	600	605
Ala Thr Glu Pro Gly Leu Phe Gly Val Trp Ala His Asn Gly Glu Val	610	615	620
Arg Thr Ala Arg Leu Leu Ser Glu Arg Asp Ala Ala Lys Gln Arg Leu	625	630	635
Val Val Leu Val Lys Asp Asn Gly Glu Pro Pro Arg Ser Ala Thr Ala	645	650	655
Thr Leu His Val Leu Leu Val Asp Gly Phe Ser Gln Pro Phe Leu Pro	660	665	670
Leu Pro Glu Ala Ala Pro Gly Gln Thr Gln Ala Asn Ser Leu Thr Val	675	680	685
Tyr Leu Val Val Ala Leu Ala Ser Val Ser Ser Leu Phe Leu Phe Ser	690	695	700
Val Leu Leu Phe Val Ala Val Arg Leu Cys Arg Arg Ser Arg Ala Ala	705	710	715
Ser Val Gly Arg Cys Ser Met Pro Glu Gly Pro Phe Pro Gly Arg Leu	725	730	735

Val Asp Val Ser Gly Thr Gly Thr Leu Ser Gln Ser Tyr Gln Tyr Glu
740 745 750

Val Cys Leu Thr Gly Gly Ser Glu Thr Ser Glu Phe Lys Phe Leu Lys
755 760 765

Pro Ile Ile Pro Asn Phe Ser Pro
770 775

<210> 443

<211> 787

<212> PRT

<213> Homo sapiens

<400> 443

Ser Phe Cys Glu Pro Thr Phe Gln Glu Lys Ala Met Glu Ile Gly Trp
1 5 10 15

Met His Asn Arg Arg Gln Arg Gln Val Leu Val Phe Phe Val Leu Leu
20 25 30

Ser Leu Ser Gly Ala Gly Ala Glu Leu Gly Ser Tyr Ser Val Val Glu
35 40 45

Glu Thr Glu Arg Gly Ser Phe Val Ala Asn Leu Gly Lys Asp Leu Gly
50 55 60

Leu Gly Leu Thr Glu Met Ser Thr Arg Lys Ala Arg Ile Ile Ser Gln
65 70 75 80

Gly Asn Lys Gln His Leu Gln Leu Lys Ala Gln Thr Gly Asp Leu Leu
85 90 95

Ile Asn Glu Lys Leu Asp Arg Glu Glu Leu Cys Gly Pro Thr Glu Pro
100 105 110

Cys Ile Leu His Phe Gln Val Leu Met Glu Asn Pro Leu Glu Ile Phe
115 120 125

Gln Ala Glu Leu Arg Val Ile Asp Ile Asn Asp His Ser Pro Met Phe
130 135 140

Thr Glu Lys Glu Met Ile Leu Lys Ile Pro Glu Asn Ser Pro Leu Gly
145 150 155 160

Thr Glu Phe Pro Leu Asn His Ala Leu Asp Leu Asp Val Gly Ser Asn

	165		170		175
Asn Val Gln Asn Tyr Lys Ile Ser Pro Ser Ser His Phe Arg Val Leu					
	180		185		190
Ile His Glu Phe Arg Asp Gly Arg Lys Tyr Pro Glu Leu Val Leu Asp					
	195		200		205
Lys Glu Leu Asp Arg Glu Glu Glu Pro Gln Leu Arg Leu Thr Leu Thr					
	210		215		220
Ala Leu Asp Gly Gly Ser Pro Pro Arg Ser Gly Thr Ala Gln Val Arg					
225		230		235	240
Ile Glu Val Val Asp Ile Asn Asp Asn Ala Pro Glu Phe Glu Gln Pro					
	245		250		255
Ile Tyr Lys Val Gln Ile Pro Glu Asn Ser Pro Leu Gly Ser Leu Val					
	260		265		270
Ala Thr Val Ser Ala Arg Asp Leu Asp Gly Gly Ala Asn Gly Lys Ile					
	275		280		285
Ser Tyr Thr Leu Phe Gln Pro Ser Glu Asp Ile Ser Lys Thr Leu Glu					
	290		295		300
Val Asn Pro Met Thr Gly Glu Val Arg Leu Arg Lys Gln Val Asp Phe					
305		310		315	320
Glu Met Val Thr Ser Tyr Glu Val Arg Ile Lys Ala Thr Asp Gly Gly					
	325		330		335
Gly Leu Ser Gly Lys Cys Thr Leu Leu Leu Gln Val Val Asp Val Asn					
	340		345		350
Asp Asn Pro Pro Gln Val Thr Met Ser Ala Leu Thr Ser Pro Ile Pro					
	355		360		365
Glu Asn Ser Pro Glu Ile Val Val Ala Val Phe Ser Val Ser Asp Pro					
	370		375		380
Asp Ser Gly Asn Asn Gly Lys Thr Ile Ser Ser Ile Gln Glu Asp Leu					
385		390		395	400
Pro Phe Leu Leu Lys Pro Ser Val Lys Asn Phe Tyr Thr Leu Val Thr					
	405		410		415
Glu Arg Ala Leu Asp Arg Glu Ala Arg Ala Glu Tyr Asn Ile Thr Leu					

420	425	430
Thr Val Thr Asp Met Gly Thr	Pro Arg Leu Lys Thr	Glu His Asn Ile
435	440	445
Thr Val Gln Ile Ser Asp Val	Asn Asp Asn Ala Pro Thr	Phe Thr Gln
450	455	460
Thr Ser Tyr Thr Leu Phe Val	Arg Glu Asn Asn Ser Pro	Ala Leu His
465	470	475 480
Ile Gly Ser Val Ser Ala Thr	Asp Arg Asp Ser Gly Ile	Asn Ala Gln
485	490	495
Val Thr Tyr Ser Leu Leu Pro	Pro Gln Asp Pro His Leu	Pro Leu Ala
500	505	510
Ser Leu Val Ser Ile Asn Ala	Asp Asn Gly His Leu Phe	Ala Leu Arg
515	520	525
Ser Leu Asp Tyr Glu Ala Leu	Arg Glu Phe Glu Phe Arg	Val Ser Ala
530	535	540
Thr Asp Arg Gly Ser Pro Ala	Leu Ser Ser Glu Ala Leu	Val Arg Val
545	550	555 560
Leu Val Leu Asp Ala Asn Asp	Asn Ser Pro Phe Val Leu	Tyr Pro Leu
565	570	575
Gln Asn Gly Ser Ala Pro Cys	Thr Glu Leu Val Pro Arg	Ala Ala Glu
580	585	590
Pro Gly Tyr Leu Val Thr Lys	Val Val Ala Val Asp Gly	Asp Ser Gly
595	600	605
Gln Asn Ala Trp Leu Ser Tyr	Gln Leu Leu Lys Ala Thr	Glu Pro Gly
610	615	620
Leu Phe Gly Val Trp Ala His	Asn Gly Glu Val Arg Thr	Ala Arg Leu
625	630	635 640
Leu Ser Glu Arg Asp Ala Ala	Lys His Arg Leu Val Val	Leu Val Lys
645	650	655
Asp Asn Gly Glu Pro Pro Cys	Ser Ala Thr Ala Thr Leu	His Val Leu
660	665	670
Leu Val Asp Gly Phe Ser Gln	Pro Phe Leu Pro Leu Pro	Glu Ala Ala

675	680	685
Pro Gly Gln Thr Gln Ala Asn Ser Leu Thr Val Tyr Leu Val Val Ala		
690	695	700
Leu Ala Ser Val Ser Ser Leu Phe Leu Phe Ser Val Leu Leu Phe Val		
705	710	715
Val Val Arg Leu Cys Arg Arg Ser Arg Ala Ala Ser Val Gly Arg Cys		
	725	730
Ser Met Pro Glu Gly Pro Phe Pro Gly Arg Leu Val Asp Val Ser Gly		
	740	745
Thr Gly Thr Leu Ser Gln Ser Tyr Gln Tyr Glu Val Cys Leu Thr Gly		
	755	760
Gly Ser Glu Thr Ser Glu Phe Lys Phe Leu Lys Pro Ile Ile Pro Asn		
	770	775
		780
Phe Ser Pro		
785		

<210> 444
 <211> 87
 <212> PRT
 <213> Homo sapiens

<400> 444
Val Ser Ala Thr Asp Arg Asp Ser Gly Thr Asn Ala Gln Val Thr Tyr
1 5 10 15
Ser Leu Leu Pro Pro Gln Asp Pro His Leu Pro Leu Ser Ser Leu Val
20 25 30
Ser Ile Asn Ala Asp Asn Gly His Leu Phe Ala Leu Arg Ser Leu Asp
35 40 45
Tyr Glu Ala Leu Gln Ala Phe Glu Phe Arg Val Gly Ala Thr Asp Arg
50 55 60
Gly Ser Pro Ala Leu Ser Ser Glu Ala Leu Val Arg Val Leu Val Leu
65 70 75 80
Asp Ala Asn Asp Asn Ser Pro
85

<210> 445

<211> 82

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Cadherin
repeats domain sequence

<400> 445

Val Ser Ala Thr Asp Ala Asp Ser Gly Glu Asn Gly Lys Val Thr Tyr
1 5 10 15

Ser Ile Leu Ser Gly Asn Asp Gly Gly Leu Phe Ser Ile Asp Pro Glu
20 25 30

Thr Gly Ile Ile Thr Thr Thr Lys Pro Leu Asp Arg Glu Glu Gln Ser
35 40 45

Glu Tyr Thr Leu Thr Val Glu Ala Thr Asp Gly Gly Gly Pro Pro Leu
50 55 60

Ser Ser Thr Ala Thr Val Thr Val Thr Val Leu Asp Val Asn Asp Asn
65 70 75 80

Ala Pro

<210> 446

<211> 82

<212> PRT

<213> Homo sapiens

<400> 446

Val Ser Ala Arg Asp Leu Asp Ile Gly Thr Asn Gly Glu Ile Ser Tyr
1 5 10 15

Ala Phe Ser Gln Ala Ser Glu Asp Ile Arg Lys Thr Phe Arg Leu Ser
20 25 30

Ala Lys Ser Gly Glu Leu Leu Leu Arg Gln Lys Leu Asp Phe Glu Ser
35 40 45

Ile Gln Thr Tyr Thr Val Asn Ile Gln Ala Thr Asp Gly Gly Gly Leu
50 55 60

Ser Gly Lys Ser Thr Val Ile Val Gln Val Val Asp Val Asn Asp Asn
65 70 75 80

Pro Pro

<210> 447

<211> 85

<212> PRT

<213> Homo sapiens

<400> 447

Asn Ala Glu Asp Leu Asp Val Gly Arg Asn Ser Leu Gln Asn Tyr Thr
1 5 10 15

Ile Thr Pro Asn Ser His Phe His Val Pro Thr Arg Ser Arg Arg Asp
20 25 30

Gly Arg Lys Tyr Pro Glu Leu Val Leu Asn Arg Ala Leu Asp Arg Glu
35 40 45

Glu Gln Pro Glu Ile Arg Leu Thr Leu Thr Ala Leu Asp Gly Gly Ser
50 55 60

Pro Pro Arg Ser Gly Thr Ala Leu Val Arg Ile Glu Val Val Asp Ile
65 70 75 80

Asn Asp Asn Val Pro
85

<210> 448

<211> 81

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Cadherin
repeats domain sequence

<400> 448

Ser Ala Thr Asp Ala Asp Ser Gly Glu Asn Gly Lys Val Thr Tyr Ser
1 5 10 15

Ile Leu Ser Gly Asn Asp Gly Gly Leu Phe Ser Ile Asp Pro Glu Thr
20 25 30

Gly Ile Ile Thr Thr Thr Lys Pro Leu Asp Arg Glu Glu Gln Ser Glu
 35 40 45

Tyr Thr Leu Thr Val Glu Ala Thr Asp Gly Gly Gly Pro Pro Leu Ser
 50 55 60

Ser Thr Ala Thr Val Thr Val Thr Val Leu Asp Val Asn Asp Asn Ala
 65 70 75 80

Pro

<210> 449

<211> 81

<212> PRT

<213> Homo sapiens

<400> 449

Ser Val Ser Asp Leu Asp Ser Gly Asp Asn Gly Arg Val Met Cys Ser
 1 5 10 15

Ile Glu Asn Asn Leu Pro Phe Phe Leu Lys Pro Ser Val Glu Asn Phe
 20 25 30

Tyr Thr Leu Val Ser Glu Gly Ala Leu Asp Arg Glu Thr Arg Ser Glu
 35 40 45

Tyr Asn Ile Thr Ile Thr Ile Thr Asp Leu Gly Thr Pro Arg Leu Lys
 50 55 60

Thr Lys Tyr Asn Ile Thr Val Leu Val Ser Asp Val Asn Asp Asn Ala
 65 70 75 80

Pro

<210> 450

<211> 76

<212> PRT

<213> Homo sapiens

<400> 450

Val Val Ala Val Asp Gly Asp Ser Gly Gln Asn Ala Trp Leu Ser Tyr
 1 5 10 15

Gln Leu Leu Lys Ala Thr Glu Pro Gly Leu Phe Gly Val Trp Ala His

	20		25		30
Asn Gly Glu Val Arg Thr Ala Arg Leu Leu Arg Glu Arg Asp Ala Ala					
	35		40		45
Lys Gln Arg Leu Val Val Leu Val Lys Asp Asn Gly Glu Pro Pro Arg					
	50		55		60
Ser Ala Thr Ala Thr Leu His Val Leu Leu Val Asp					
	65		70		75

<210> 451

<211> 76

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Cadherin
repeats domain sequence

<400> 451

Val Ser Ala Thr Asp Ala Asp Ser Gly Glu Asn Gly Lys Val Thr Tyr
1 5 10 15

Ser Ile Leu Ser Gly Asn Asp Gly Gly Leu Phe Ser Ile Asp Pro Glu
20 25 30

Thr Gly Ile Ile Thr Thr Thr Lys Pro Leu Asp Arg Glu Glu Gln Ser
35 40 45

Glu Tyr Thr Leu Thr Val Glu Ala Thr Asp Gly Gly Gly Pro Pro Leu
50 55 60

Ser Ser Thr Ala Thr Val Thr Val Thr Val Leu Asp
65 70 75

<210> 452

<211> 91

<212> PRT

<213> Homo sapiens

<400> 452

Tyr Glu Val Gln Ile Pro Glu Asp Ser Pro Val Gly Ser Gln Val Ala
1 5 10 15

Ile Val Ser Ala Arg Asp Leu Asp Ile Gly Thr Asn Gly Glu Ile Ser

<400> 454

Tyr Thr Leu Phe Val Arg Glu Asn Asn Ser Pro Ala Leu His Ile Gly
1 5 10 15

Ser Val Ser Ala Thr Asp Arg Asp Ser Gly Thr Asn Ala Gln Val Thr
20 25 30

Tyr Ser Leu Leu Pro Pro Gln Asp Pro His Leu Pro Leu Ser Ser Leu
35 40 45

Val Ser Ile Asn Ala Asp Asn Gly His Leu Phe Ala Leu Arg Ser Leu
50 55 60

Asp Tyr Glu Ala Leu Gln Ala Phe Glu Phe Arg Val Gly Ala Thr Asp
65 70 75 80

Arg Gly Ser Pro Ala Leu Ser Ser Glu Ala Leu Val Arg Val Leu Val
85 90 95

Leu

<210> 455

<211> 92

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Cadherin
repeats domain sequence

<400> 455

Tyr Ser Ala Ser Val Pro Glu Asn Ala Pro Val Gly Thr Glu Val Leu
1 5 10 15

Thr Val Thr Ala Thr Asp Ala Asp Leu Gly Pro Asn Gly Arg Ile Phe
20 25 30

Tyr Ser Ile Leu Gly Gly Gly Pro Gly Gly Trp Phe Arg Ile Asp Pro
35 40 45

Asp Thr Gly Asp Leu Ser Thr Thr Lys Pro Leu Asp Arg Glu Ser Ile
50 55 60

Gly Glu Tyr Glu Leu Thr Val Leu Ala Thr Asp Ser Gly Gly Pro Pro
65 70 75 80

Leu Ser Gly Thr Thr Thr Val Thr Ile Thr Val Leu
85 90

<210> 456

<211> 85

<212> PRT

<213> Homo sapiens

<400> 456

Val Pro Arg Ala Ala Glu Pro Gly Tyr Leu Val Thr Lys Val Val Ala
1 5 10 15

Val Asp Gly Asp Ser Gly Gln Asn Ala Trp Leu Ser Tyr Gln Leu Leu
20 25 30

Lys Ala Thr Glu Pro Gly Leu Phe Gly Val Trp Ala His Asn Gly Glu
35 40 45

Val Arg Thr Ala Arg Leu Leu Arg Glu Arg Asp Ala Ala Lys Gln Arg
50 55 60

Leu Val Val Leu Val Lys Asp Asn Gly Glu Pro Pro Arg Ser Ala Thr
65 70 75 80

Ala Thr Leu His Val
85

<210> 457

<211> 85

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Cadherin
repeats domain sequence

<400> 457

Val Pro Glu Asn Ala Pro Val Gly Thr Glu Val Leu Thr Val Thr Ala
1 5 10 15

Thr Asp Ala Asp Leu Gly Pro Asn Gly Arg Ile Phe Tyr Ser Ile Leu
20 25 30

Gly Gly Gly Pro Gly Gly Trp Phe Arg Ile Asp Pro Asp Thr Gly Asp
35 40 45

Leu Ser Thr Thr Lys Pro Leu Asp Arg Glu Ser Ile Gly Glu Tyr Glu
 50 55 60

Leu Thr Val Leu Ala Thr Asp Ser Gly Gly Pro Pro Leu Ser Gly Thr
 65 70 75 80

Thr Thr Val Thr Ile
 85

<210> 458

<211> 91

<212> PRT

<213> Homo sapiens

<400> 458

Ile Leu Glu Ser Thr Leu Pro Gly Thr Val Ile Pro Leu Gly Asn Ala
 1 5 10 15

Glu Asp Leu Asp Val Gly Arg Asn Ser Leu Gln Asn Tyr Thr Ile Thr
 20 25 30

Pro Asn Ser His Phe His Val Pro Thr Arg Ser Arg Arg Asp Gly Arg
 35 40 45

Lys Tyr Pro Glu Leu Val Leu Asn Arg Ala Leu Asp Arg Glu Glu Gln
 50 55 60

Pro Glu Ile Arg Leu Thr Leu Thr Ala Leu Asp Gly Gly Ser Pro Pro
 65 70 75 80

Arg Ser Gly Thr Ala Leu Val Arg Ile Glu Val
 85 90

<210> 459

<211> 87

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Cadherin
 repeats domain sequence

<400> 459

Val Pro Glu Asn Ala Pro Val Gly Thr Glu Val Leu Thr Val Thr Ala
 1 5 10 15

Thr Asp Ala Asp Leu Gly Pro Asn Gly Arg Ile Phe Tyr Ser Ile Leu
 20 25 30
 Gly Gly Gly Pro Gly Gly Trp Phe Arg Ile Asp Pro Asp Thr Gly Asp
 35 40 45
 Leu Ser Thr Thr Lys Pro Leu Asp Arg Glu Ser Ile Gly Glu Tyr Glu
 50 55 60
 Leu Thr Val Leu Ala Thr Asp Ser Gly Gly Pro Pro Leu Ser Gly Thr
 65 70 75 80
 Thr Thr Val Thr Ile Thr Val
 85

<210> 460
 <211> 86
 <212> PRT
 <213> Homo sapiens

<400> 460
 Ile Pro Glu Asn Ser Gly Glu Thr Val Leu Ala Val Phe Ser Val Ser
 1 5 10 15
 Asp Leu Asp Ser Gly Asp Asn Gly Arg Val Met Cys Ser Ile Glu Asn
 20 25 30
 Asn Leu Pro Phe Phe Leu Lys Pro Ser Val Glu Asn Phe Tyr Thr Leu
 35 40 45
 Val Ser Glu Gly Ala Leu Asp Arg Glu Thr Arg Ser Glu Tyr Asn Ile
 50 55 60
 Thr Ile Thr Ile Thr Asp Leu Gly Thr Pro Arg Leu Lys Thr Lys Tyr
 65 70 75 80
 Asn Ile Thr Val Leu Val
 85

<210> 461
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 461

atgtgatctt tggctgtgaa gt

22

<210> 462

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 462

ctaccccatg gcctccatcg agt

23

<210> 463

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 463

ggatgtccaa gccatcctt

19

<210> 464

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 464

ctgcaaccac atgatcatac aa

22

<210> 465

<211> 26

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: PCR Primer
 sequence

 <400> 465
 atcaggaac ctgaccacac ttgtaa 26

 <210> 466
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: PCR Primer
 sequence

 <400> 466
 atggatgaag acatgctcct tt 22

 <210> 467
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: PCR Primer
 sequence

 <400> 467
 actggtgctg aagatcatga gt 22

 <210> 468
 <211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: PCR Primer
 sequence

 <400> 468
 cacctttgca cctatctctg accggt 26

<210> 469
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 469
aggctccagg ctgagtagac t 21

<210> 470
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 470
tacgagaact tcctggaaga ca 22

<210> 471
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 471
aagcccttat gaccgcatg gaatat 26

<210> 472
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

sequence

<400> 472
attacagcgc ttttgatga a 21

<210> 473
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 473
acaaggtcat ggaggaattc at 22

<210> 474
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 474
agcttttctca ggaccctgcc cgt 23

<210> 475
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 475
tgggtaacgt ccaggaagat 20

<210> 476
<211> 22
<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 476

acaagggtcat ggaggaattc at

22

<210> 477

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 477

agcttttctca ggaccctgcc cgt

23

<210> 478

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 478

tgggtaacgt ccaggaagat

20

<210> 479

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 479

cctcatcctt ttcattgttca ga

22

<210> 480
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 480
actcctcagt accggttccg gaagag 26

<210> 481
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 481
gccgtaaaac atcactttgt ct 22

<210> 482
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 482
cctcatcctt ttcattgtca ga 22

<210> 483
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 483
actcctcagt accggttccg gaagag 26

<210> 484
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 484
gccgtaaaac atcactttgt ct 22

<210> 485
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 485
cagggtcgaa tctggaatgg 20

<210> 486
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 486
tctggcttca gctatcaggg caccc 25

<210> 487
<211> 19
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 487

cccgatcatcc gtttccaat

19

<210> 488

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 488

gctccttcta cttcgccatc

20

<210> 489

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 489

tcatactac catcgagtac ggccac

26

<210> 490

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 490

acatgcagaa gaccttgcc

19

<210> 491
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 491
acagactccc agatggtgtc t 21

<210> 492
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 492
ctcctccaag gagcctcact gctgag 26

<210> 493
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
sequence

<400> 493
ggctgccttc aatagtaaca ga 22

<210> 494
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
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<210> 495
<211> 23
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ctgtccctgg gacaccagct ggt 23

<210> 496
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caggttgacg taggtgaaga tg 22

<210> 497
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<400> 497
gaagatgtct gtgcaccgga t 21

<210> 498
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cacccatcca gactttgaga agctccac

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22

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28

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gacctacgtt accacctgca gcagaa 26

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ctggtacgga ttgaagttgt g 21

<210> 507

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<212> DNA

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<210> 508

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<210> 509

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attgcacggg agaataataa aa

22

<210> 510

<211> 26

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sequence

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ccaagggcca agagaatatc cgaact

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sequence

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sequence

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tgtggtcagg tgcatgtaga ta 22

<210> 518
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sequence

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sequence

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<210> 520
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sequence

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aaggtagact ttcgcacagg tt 22

<210> 521
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sequence

<400> 521
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<210> 522
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sequence

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acagtgtctct tggccctgca tgt 23

<210> 523
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<400> 523
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<210> 524
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sequence

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gcctgcctta tctttctgaa ct

22

<210> 525

<211> 26

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sequence

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sequence

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sequence

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sequence

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sequence

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sequence

<400> 530
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<220>
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<210> 532
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sequence

<400> 532
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<210> 533
<211> 22
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sequence

<400> 533
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<210> 534
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sequence

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sequence

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22

<210> 536

<211> 22

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sequence

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acctgctgaa ggaactcact ct

22

<210> 537

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<400> 537

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<210> 538

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sequence

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gcaaaagtgc ttctcacta tg

22

<210> 539
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 <400> 539
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ggactttgat cccctacaga tg 22

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sequence

<400> 543
tcaaatagaag aggacatcct ctccat 26

<210> 544
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sequence

<400> 544
ctgagaacgg atagctgaga ac 22

<210> 545
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sequence

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aaggctcaga acagcaggat 20

<210> 546
<211> 24
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